STATE OF MINNESOTA DISTRICT COURT
COUNTY OF RAMSEY SECOND JUDICIAL DISTRICT

- -

The State of Minnesota,
by Hubert H. Humphrey, III,
its attorney general,
and
Blue Cross and Blue Shield
of Minnesota,

Plaintiffs,

vs. File No. C1-94-8565

Philip Morris, Incorporated, R.J.
Reynolds Tobacco Company, Brown &
Williamson Tobacco Corporation,
B.A.T. Industries P.L.C., Lorillard
Tobacco Company, The American
Tobacco Company, Liggett Group, Inc.,
The Council for Tobacco Research-U.S.A.,
Inc., and The Tobacco Institute, Inc.,

Defendants.

- -

STIREWALT & ASSOCIATES
P.O. BOX 18188, MINNEAPOLIS, MN 55418 1-800-553-1953

(The following is the deposition of ROBERT D. VERHALEN, M.D., P.H., taken pursuant to notice, at the offices of Dorsey & Whitney, Pillsbury Center South, 220 South Sixth Street, Minneapolis, Minnesota, commencing at approximately 8:45 o'clock a.m., September 3, 1997.

APPEARANCES:

On Behalf of the Plaintiffs:
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I N D E X

Robert D. Verhalen, M.D., P.H.
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P R O C E E C D I N G S

(Witness sworn.)

ROBERT D. VERHALEN, M.D., P.H.
called as a witness, being first duly sworn, was examined and testified as follows:

ADVERSE EXAMINATION

MR. LOVE:
Q. Would you please state your name for the record?
A. Robert D. Verhalen.
Q. Dr. Verhalen, my name is John Love. I'm with the law firm of Robins, Kaplan, Miller and Ciresi. We represent the State of Minnesota and Blue Cross Blue Shield of Minnesota in litigation against various tobacco companies.
I take it you're generally familiar with that litigation?
A. Yes, I am.
Q. When did you first hear about this litigation?
A. I guess I first heard about it probably around the early part of this year.
Q. Early part of 1997?
A. Yeah. I'm not sure exactly. I knew there was litigation in several states.
Q. How did you first become aware of the Minnesota

litigation?
A. It was mentioned by Mr. Borman.
Q. Keith Borman?

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08:57:49 A. Yes.
08:57:49 Q. And you think that was around February of this
08:57:52 year?
08:57:52 A. I don't know if it was around February. It was
08:57:56 earlier this year. I don't recall exactly when it
08:57:58 was first mentioned, but I didn't get involved until
08:58:03 later.
08:58:04 Q. From the time it was first mentioned to you
08:58:06 earlier this year until you became more involved did
08:58:10 you have any contact or discussions about this
08:58:13 litigation?
08:58:14 A. Not that I recall substantive contact, no. I
08:58:21 mean there might have been occasional mention about
08:58:25 the fact that the case was pending and occurring
08:58:30 sometime next year. That was about as far as it
08:58:32 went.
08:58:33 Q. At what point in time did you become more
08:58:39 involved in this litigation?
08:58:40 A. I think probably in June of this year.
08:58:44 Q. How did that come about?
08:58:49 A. Mr. Borman sent me some materials and asked me
08:58:54 to review them and asked whether or not I would be

08:58:58 willing to be a witness for the -- for his firm in
08:59:04 this litigation.
08:59:07 Q. His firm being the Shook, Hardy firm?
08:59:10 A. Yes.
08:59:11 Q. Do you recall what materials he sent you?
08:59:14 A. I think some materials I had in hand already,
08:59:22 things like SAMMEC, smoking and preventive mortality
08:59:33 that I had reviewed sometime earlier in another
08:59:38 context.
08:59:43 I don't recall what specific documents he might
08:59:46 have sent me at that time that related to Minnesota,
08:59:50 but probably some of the earlier analysis.
09:00:01 Q. In what context had you previously reviewed
09:00:04 SAMMEC?
09:00:05 A. With respect to litigation that was occurring in
09:00:08 the State of Mississippi.
09:00:09 Q. Were you involved in any way in the Mississippi
09:00:14 litigation?
09:00:15 A. Well, the Mississippi case never came to
09:00:19 litigation; it was settled.
09:00:20 Q. But there was a lawsuit pending in Mississippi,
09:00:23 correct?
09:00:23 A. Yes.
09:00:24 Q. Were you involved in any way in that lawsuit?
09:00:27 A. I was preparing for testimony by deposition.

09:00:32 Q. Had you agreed to be an expert witness in the
09:00:42 Mississippi litigation?
09:00:43 A. Yes, I had.
09:00:44 Q. When was your first contact with the Mississippi
09:00:47 litigation?
09:00:48 A. That was sometime last year. I don't recall
09:00:51 exactly when.
09:00:51 Q. Sometime in 1996?
09:00:53 A. Yes.
09:00:54 Q. For whom were you acting as an expert in the

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09:01:05 11 Mississippi litigation?
09:01:06 12 A. Same firm.
09:01:10 13 Q. Was the subject matter of your expert testimony
09:01:14 14 in Mississippi going to be substantially the same as
09:01:16 15 it is in this Minnesota litigation?
09:01:19 16 A. Well, to the extent that the premise on which
09:01:22 17 the litigation were based were the same, but they had
09:01:26 18 a different expert witness preparing their material
09:01:29 19 so the approach was somewhat different.
09:01:35 20 Q. Did you prepare an expert report in the
09:01:37 21 Mississippi litigation?
09:01:38 22 A. No, I did not.
09:01:39 23 Q. Had you done any work on an expert report,
09:01:44 24 drafting it or outlining it?
09:01:46 25 A. No.

09:01:46 1 Q. Had you reviewed any expert report from the
09:01:57 2 plaintiffs in the Mississippi litigation?
09:01:59 3 A. Yes, I had.
09:02:00 4 Q. What report was that?
09:02:01 5 A. There was a report by Vincent Miller who was the
09:02:09 6 model builder for that litigation, and there was
09:02:15 7 material that he had used in developing that model.
09:02:18 8 Q. And among those materials were there any
09:02:27 9 documents prepared by Leonard Miller?
09:02:31 10 A. There may have been, but I didn't -- I don't
09:02:35 11 recall looking at them in that context. I had seen
09:02:39 12 some of the earlier Leonard Miller stuff, as I said,
09:02:43 13 the previous year when he had first produced some
09:02:46 14 stuff on SAMMEC.
09:02:48 15 I think he was involved originally in toying
09:02:51 16 with the SAMMEC model, and I think I recall hearing
09:02:55 17 that he was originally going to be a witness in
09:02:58 18 Mississippi and then for some reason was, dropped and
09:03:01 19 that's why Vincent Miller picked it up.
09:03:06 20 I don't recall the exact circumstances under
09:03:08 21 which that change occurred.
09:03:14 22 Q. Were you deposed in the Mississippi litigation?
09:03:18 23 A. No.
09:03:19 24 Q. Do you know if Vincent Miller was deposed in the
09:03:29 25 Mississippi litigation?

09:03:30 1 A. Yes, I think he was.
09:03:31 2 Q. Did you review a transcript of his deposition?
09:03:34 3 A. I seem to recall doing that.
09:03:43 4 Q. And your work in the Minnesota litigation that
09:03:47 5 we're talking about today, did you review any of
09:03:53 6 these -- any portion of Vincent Miller's expert
09:03:57 7 report in the Mississippi litigation?
09:04:00 8 A. In preparing for this?
09:04:02 9 Q. Yes.
09:04:03 10 A. No, not specifically. There were some of the
09:04:07 11 background materials that I might have revied the
09:04:12 12 NMES and the BRFSS which they had, but I don't recall
09:04:18 13 looking at the Vincent Miller report with respect to
09:04:21 14 the Leonard Miller model.
09:04:23 15 Q. Did you review Vincent Miller's deposition
09:04:28 16 transcript in any part in doing your work on the
09:04:31 17 Minnesota litigation?

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09:04:31 A. No, I didn't. When I say "no, I didn't," I
09:04:41 guess I may have, but it would have just been in
09:04:44 passing looking for something he might have referred
09:04:47 to, but I don't recall a specific review with an eye
09:04:55 toward this litigation.
09:04:56 Q. But you may have reviewed it as part of a
09:04:59 general review of documents in working on the
09:05:02 Minnesota litigation?

09:05:03 A. Yeah. It's difficult to separate it out what I
09:05:06 was reviewing for which particular action. There was
09:05:09 some overlap.
09:05:13 Certainly you don't forget one thing after you
09:05:16 review it and then move on to something else.
09:05:23 Q. Did you make any notes on the Vincent Miller
09:05:32 deposition transcript?
09:05:33 A. No. I don't generally as a rule make notes of
09:05:37 anything I've got in my possession because I want to
09:05:41 keep it clean in case I have to make copies of it.
09:05:45 I may occasionally scribble something on a piece
09:05:48 of paper just to remind myself as I'm reading through
09:05:52 a document, but when I'm done, all those things get
09:05:59 dropped in the waste basket.
09:06:01 Q. At the time that you completed your expert
09:06:05 report in this case what documents did you have in
09:06:09 your possession that related in any way to your work
09:06:13 on this case?
09:06:15 A. Well, I gave a list of some sixty-one documents
09:06:22 that are available. I think most of them are
09:06:25 available up here with my expert report, and those
09:06:28 are the documents I was specifically reviewing or
09:06:32 referring to or had reviewed with an eye toward
09:06:38 drawing my conclusions about the Minnesota litigation.
09:06:56 MR. LOVE: Would you mark this?

09:07:36 (Plaintiffs' Deposition Exhibit No. 3300 - notice -
09:07:36 marked for identification.)
09:07:39 MR. LOVE:
09:07:39 Q. Doctor, I'll show you what we have marked as
09:07:42 Deposition Exhibit 3300. It's a cover letter and
09:07:48 notice of taking your deposition in this case.
09:07:54 Can you tell me if you've seen those before,
09:07:57 sir?
09:07:57 A. I don't recall seeing this specific document,
09:08:14 no.
09:08:14 Q. If you look at the second page of the deposition
09:08:23 notice you'll see a quotation that's labeled capital
09:08:28 D, scope of document discovery experts. Do you have
09:08:33 with you today all of the published reports and
09:08:39 articles that you've authored?
09:08:41 A. No, I don't. We had sent a complete set of
09:08:46 those out here in advance.
09:08:52 MR. WILSON: Just for the record, this
09:08:53 area is subject to some dispute. I understand that
09:08:57 there are efforts to try to reach some kind of an
09:08:59 agreement on it including the meet and confer that
09:09:04 was held yesterday, and we do disagree with the
09:09:09 nature and extent of the obligation to provide this
09:09:12 material that you're inquiring into.

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09:09:15 25 MR. LOVE: Can you tell me whether in

09:09:17 1 the materials that you've provided to us along with
09:09:21 2 Dr. Verhalen's expert report did that include all of
09:09:26 3 his published articles and reports?
09:09:29 4 MR. WILSON: I can't tell you that.
09:09:30 5 Maybe the doctor can tell you that.
09:09:32 6 BY MR. LOVE:
09:09:32 7 Q. In any event, you didn't bring any published or
09:09:40 8 authored reports with you today I take it?
09:09:43 9 A. No, I have not.
09:09:45 10 MR. LOVE: Would you mark this?
09:10:54 11 (Plaintiffs' Deposition Exhibit No. 3301 - expert
09:10:59 12 report - marked for identification.)
09:11:00 13 BY MR. LOVE:
09:11:00 14 Q. Dr. Verhalen, I'll show you what we have marked
09:11:03 15 as Exhibit 3301 which I believe is a complete set of
09:11:08 16 the report and attachments and materials that we
09:11:13 17 received from defense counsel in connection with your
09:11:17 18 expert report.
09:11:21 19 If you can just take a quick look at that and
09:11:24 20 tell me without going through each page, does it look
09:11:28 21 like a complete set of materials that you prepared
09:11:32 22 with your expert report?
09:11:34 23 A. If everything is with the tabs and nothing's
09:11:37 24 been deleted then the tabs is a listing that we had
09:11:41 25 put on here, that looks like it may be, presuming

09:11:50 1 nothing got lost in the transfer.
09:11:52 2 Q. If you look at tab 3 on Exhibit 3301 is that a
09:12:08 3 complete list of the articles and reports that have
09:12:15 4 been published that you authored?
09:12:17 5 A. This is -- yeah, it looks like it's a complete
09:12:31 6 list. It's the one that usually accompanies my
09:12:37 7 deposition -- I mean my CV.
09:12:42 8 Q. Do you recall the last time you updated this
09:12:45 9 list?
09:12:45 10 A. Probably would have been -- I'm trying to think.
09:12:55 11 Probably early July.
09:12:57 12 Q. Of this year?
09:12:59 13 A. Yeah. And there would have been no additions.
09:13:10 14 Q. Under tab no. 7 Exhibit 3301 you've included
09:13:30 15 what are called copies of selective relevant articles
09:13:33 16 you reviewed; is that correct?
09:13:35 17 A. Yes.
09:13:36 18 Q. Does that set of articles include all of the
09:13:39 19 articles and reports that are listed in tab 3?
09:13:47 20 A. Probably not because tab 3 was not intended to
09:13:52 21 be a list of relevant articles to the current
09:13:56 22 litigation.
09:13:56 23 It was a list of articles, speeches, papers and
09:14:00 24 so on that I had produced during my professional
09:14:03 25 career. These are articles that I have reviewed and

09:14:08 1 just --
09:14:08 2 Q. This meaning tab 7 articles?
09:14:11 3 A. Yeah. The tab 7 articles are articles that I

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have reviewed with an eye toward looking at the circumstances surrounding the Minnesota litigation.
Q. And the tabs have include articles that you did not author, correct?
A. Oh, yes.
Q. So I take it then that within Exhibit 3301 we do not have a complete set of all the published articles and reports that you have authored.
A. That's correct.
MR. LOVE: To the extent that we're entitled to all of his published articles and reports we reserve our right to reconvene Dr. Verhalen until such time until we previously receive those.
THE WITNESS: I would like to make a comment; though what we're talking about in tab 3 are not all articles, nor were most of them published. Many of these are not copies of things that I still have anywhere in my files. They're simply papers and speeches that I prepared through the years. I wouldn't be able to provide copies, for instance, of the epidemiology and accident prevention which was delivered at North Carolina, a short course

in epidemiology back in 1968. These things simply don't exist any more.
BY MR. LOVE:
Q. So some of the items listed in tab 3 are published reports and some are not?
A. That's correct.
Q. And you would have to go through the list if you wanted to get all the published articles and papers to determine which ones were published and then find it correct?
A. That's correct. There probably are three or four. Who's Right About ATVs was published in --
MR. BORMAN: There is no question.
BY MR. LOVE:
Q. If you can go through those which ones have been published, I would appreciate it.
A. Beginning with the first page of it then --
Q. This is the first page of tab 3 of Exhibit 3301?
A. Yes. Hospital Reporting System, Statistical Reporter No. 70-11 in May of 1970. I don't have a copy of this, but it was published in the Statistical Reporter which is a Washington document, a government document I think, by the Bureau of Health Statistics, may or may not be available.
The reports of the National Commission on

Product Safety which I took part in authoring, Product and Injury Identification Part I in the Supplemental Studies doesn't cite the specific portions that I put together, but I put together a large part of that, as well as the final report of the National Commission.
Q. Which items on the first page of tab 3 are you talking about now? Is it the one that starts out Products Risks to Consumers?
A. Product and Injury Identification Part I. And

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09:17:52 then just above it, the Collection of Injury Data
09:17:56 chapter, Significance and Utilization of the final
09:18:00 report of the National Commission on Product Safety.
09:18:04 That's all on the first page. Those two documents
09:18:07 are available. There is substantial and would have
09:18:12 to be copied.
09:18:13 Q. As far as you know they're not in tab 7?
09:18:15 A. No, they are not, but they have nothing to do
09:18:19 with this litigation. It was strictly Consumer
09:18:22 Product Safety Commission.
09:18:23 Q. I just want to make sure they're not in tab 7.
09:18:27 A. They're not in tab 7. Nothing on page 2 -- tab
09:18:56 3.
09:18:57 Q. Nothing on page 3 was published?
09:19:03 A. That's correct.

09:19:04 Q. On page 4 --
09:19:39 A. Page 3 of tab 3, second from the bottom, Who's
09:19:43 Right About ATVs which was published in the Society
09:19:49 of Automotive Medicine Journal following a Symposium
09:19:57 in New York back in 1987.
09:20:00 Q. That's not on tab 7 either, is it?
09:20:04 A. No. I think that's it. There was -- let me
09:20:49 check something here on tab 7. Because there was
09:21:15 another document that was prepared and I didn't see
09:21:17 it on my tab 3 list, and that was a publication on
09:21:19 the Guidelines for the Documentation of
09:21:26 Epidemiological Research which was prepared back in
09:21:32 the late seventies.
09:21:34 Q. I believe that is tab 7, Dr. Verhalen. We can
09:21:40 come across that later.
09:21:42 A. But I didn't see it in tab 3 for some reason.
09:21:47 It should have been in there.
09:21:49 Q. Other than those guidelines can you recall any
09:21:52 other articles or reports that you've published
09:21:55 besides the ones you've just told my about on tab 3?
09:21:59 A. I don't think there were any others.
09:22:21 Q. Now, you were telling me the articles in tab 7
09:22:25 are things that you reviewed in doing your work on
09:22:27 this Minnesota litigation; is that correct?
09:22:30 A. That's correct.

09:22:30 Q. When did you first start reviewing those
09:22:33 articles?
09:22:33 A. Probably would have been around June, around the
09:22:36 time that Mr. Borman had asked me whether or not I
09:22:39 would be agreeable to being an expert witness in this
09:22:43 case.
09:22:43 Q. And had you reviewed any of those articles in
09:22:49 connection with your work on the Mississippi case?
09:22:51 A. I may have. I couldn't tell you which ones.
09:22:54 Q. Under tab 5 of Exhibit 3301 is that your list of
09:23:29 the major publications you reviewed at this Minnesota
09:23:32 litigation?
09:23:33 A. Yes, it is.
09:23:34 Q. Since preparing this list have you reviewed any
09:23:45 other major publications for the Minnesota
09:23:47 litigation?
09:23:48 A. Not that I -- not that's not on here. There may

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09:23:58 18 have been an additional expert report or two, but
09:24:07 19 there were a couple of others that we got recently.
09:24:11 20 I'm trying too remember. Samet, we have got him on
09:24:15 21 there. I think this is pretty well a complete list.
09:24:20 22 Q. The last item on this list of tab 5 is the
09:24:38 23 expert report of Scott Zeger, Timothy Wyant and
09:24:41 24 Leonard Miller dated June 2nd, 1997, correct?
09:24:45 25 A. Yes. That -- now that I look at it, there is

09:24:51 1 one more that I had just received the other day and
09:24:55 2 that's Wyant's additional report which was very
09:25:00 3 short. I wouldn't call it a major report.
09:25:05 4 Q. When did you receive this second report of Dr.
09:25:09 5 Wyant?
09:25:10 6 A. Just yesterday.
09:25:11 7 Q. Have you formed any opinions about that report,
09:25:20 8 sir?
09:25:20 9 A. Not in particular. It was an extension of
09:25:24 10 pretty much of what I had seen with the Zeger report,
09:25:28 11 and I did receive it before yesterday. It was sent
09:25:32 12 to me maybe a week or ten days ago.
09:25:36 13 I have no particular opinions one way or the
09:25:40 14 other at this point about Wyant. I would have to
09:25:53 15 take a look at it again to tell you what my general
09:25:58 16 impressions were.
09:25:59 17 Q. So sitting here today you can't even recall
09:26:01 18 general impressions about the report; is that
09:26:03 19 correct?
09:26:03 20 A. It's pretty difficult to separate out one report
09:26:07 21 from the other from memory. I would like to look at
09:26:14 22 the document if I may.
09:26:22 23 Q. Perhaps we can get a copy of that that we can
09:26:43 24 show you later today or tomorrow, Dr. Verhalen.
09:26:46 25 Does it help if I suggest to you that that

09:26:49 1 report determines for never smokers in Minnesota who
09:26:52 2 were not covered by Blue Cross or state health
09:26:56 3 programs the size of the health care costs imposed
09:27:00 4 by them in 1978-1976; does that help separate them
09:27:06 5 out that report from the June 2nd report of Zeger,
09:27:11 6 Wyant and Miller?
09:27:11 7 A. It may separate it out, but it doesn't give me
09:27:14 8 what I need to give you my general characterization.
09:27:20 9 Q. Do you intend to offer any expert opinions about
09:27:25 10 Dr. Wyant's report?
09:27:28 11 A. I'd like to look at it again to know. What I
09:27:33 12 did was I offered to offer -- I offered to provide
09:27:36 13 expert opinions in response to comments made by
09:27:44 14 plaintiffs' experts, but that would be with reference
09:27:46 15 to specific questions.
09:27:48 16 Q. Is there any particular assignment that you have
09:27:56 17 in terms of responding to that report of Dr. Wyant?
09:28:01 18 A. Assignment?
09:28:01 19 Q. Have you been asked to do anything other than
09:28:04 20 read the report?
09:28:05 21 A. No.
09:28:05 22 Q. You haven't been asked your opinion about any
09:28:08 23 portion of the report?
09:28:10 24 A. No, not yet.

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09:28:11 25 Q. And you don't know whether you'll ever offer any

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09:28:16 1 expert opinion about that report?
09:28:17 2 A. Depends on whether or not a question is raised.
09:28:20 3 Q. And so far a question hasn't been raised?
09:28:24 4 A. That's correct.
09:28:24 5 Q. I'll show you a copy of that last report on tab
09:28:27 6 5 of Exhibit 3301, the expert report of Zeger, Wyant
09:28:33 7 and Miller dated June 2nd, 1997 which has been
09:28:36 8 previously marked as Exhibit 2321.
09:28:42 9 Is that the same report that you're referring to
09:28:45 10 in the last item of tab 5?
09:28:47 11 A. It appears to be. Yes, it appears to be.
09:28:58 12 Q. When did you first receive that report, Dr.
09:29:00 13 Verhalen?
09:29:02 14 A. Maybe a month ago.
09:29:13 15 Q. Was it before or after you wrote your expert
09:29:17 16 report which is Exhibit 3301?
09:29:20 17 A. It would have been before.
09:29:22 18 Q. And you wrote -- that report has a date at the
09:29:25 19 top of it, your report. I'm confusing you.
09:29:31 20 If you look at your report, 3301, it has a date
09:29:37 21 at the top of July 1st, 1997; isn't that correct?
09:29:40 22 A. It's a little over a month ago.
09:29:42 23 Q. And if we look at page 22 of your report where
09:29:47 24 you've signed it, you've dated your signature on it
09:29:54 25 as June 26th, 1997. Is that when you finished the

09:29:58 1 report, sir?
09:29:59 2 A. That's correct.
09:29:59 3 Q. How much before June 26th, 1997 did you receive
09:30:05 4 a copy of the Zeger, Wyant, Miller report, Exhibit
09:30:08 5 2321?
09:30:10 6 A. I don't recall. It would have been perhaps two
09:30:13 7 weeks, two, three weeks.
09:30:16 8 Q. Was it --
09:30:18 9 A. I'm guessing at these time frames because it's
09:30:21 10 very difficult to recall when things are received in
09:30:24 11 the office.
09:30:25 12 Q. Do you make any notes in your office about when
09:30:27 13 you receive documents such as the Zeger, Miller Wyant
09:30:31 14 report?
09:30:32 15 A. No, I never had.
09:30:33 16 Q. Did that report come with any type of cover
09:30:37 17 letter to you?
09:30:37 18 A. No. Generally when I receive reports like that
09:30:40 19 it just contains a card usually from Mr. Thompson.
09:30:43 20 Q. Do you keep any type of log or time sheet that
09:30:51 21 indicates on a day by day or week by week basis what
09:30:56 22 you've done?
09:30:57 23 A. Yes, in terms of hours under general
09:31:00 24 classification by who the client is, but not
09:31:06 25 specifically what's done.

09:31:06 1 Q. So what do you call that, that classification of
09:31:15 2 what clients you're working for and --
09:31:18 3 A. Well, I have more than Shook, Hardy & Bacon as a

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09:31:23 client.
09:31:23 Q. Do you have any particular book or notebook or
09:31:26 something that you keep this information on?
09:31:28 A. No, it's on my computer. It's just a log of
09:31:32 hours spent working for any particular client.
09:31:34 Q. And that computer log would not indicate when
09:31:38 you received a particular document such as the Wyant,
09:31:41 Miller, Zeger report?
09:31:44 A. No.
09:31:44 Q. Now, after you agreed to become involved in the
09:32:14 Minnesota case which I believe you told me was around
09:32:20 June of this year; is that right?
09:32:21 A. Yeah, it seems to me it was probably early June.
09:32:25 Q. Do you recall how much after that you received
09:32:28 the Zeger, Wyant, Miller report?
09:32:30 A. No, I really don't. I received them just about
09:32:34 the same time. Really those are details that I don't
09:32:38 bother keeping track of.
09:32:42 Q. What were you asked to do when you became
09:32:45 involved in the Minnesota litigation?
09:32:48 A. Simply review the documents first, and then
09:32:51 later on I was told that an expert report would be

09:32:54 necessary and the date by which it was needed.
09:32:57 And I started reviewing documents and then I
09:33:02 started producing the report.
09:33:04 Q. What was your report supposed to address?
09:33:05 MR. WILSON: Let me caution the
09:33:08 witness not to reveal the substance of any
09:33:11 communication you have had with your counsel.
09:33:14 You can certainly talk about what the
09:33:15 subject matter of your report is.
09:33:19 BY MR. LOVE:
09:33:19 Q. Prior to the time that you received the Zeger,
09:33:26 Wyant, Miller report did you have an understanding of
09:33:29 what the subject matter of your expert report was
09:33:35 supposed to be in this litigation?
09:33:39 A. Well, no, other than the fact that I intended to
09:33:45 review these reports and try to come to some
09:33:48 conclusions whether or not the model being used by
09:33:53 Minnesota made much sense.
09:33:54 Q. Do you recall if you started to review any of
09:34:09 the literature, for instance, as we see in tab 7
09:34:13 prior to the time you received the Wyant, Miller,
09:34:15 Zeger expert report?
09:34:18 A. Yes, I may have. As I said, some of those I had
09:34:22 reviewed earlier with respect to other litigations.
09:34:25 Q. And I should have asked you, in connection with

09:34:27 the Minnesota litigation did you review any of the
09:34:30 literature such as we see in tab 7 prior to receiving
09:34:33 the Wyant, Miller, Zeger expert report?
09:34:36 A. I really don't recall.
09:34:38 Q. You just can't recall the time sequence of
09:34:44 events?
09:34:46 A. That's correct.
09:34:46 Q. Did you work with anyone in preparing your
09:34:49 expert report, Exhibit 3301?
09:34:50 A. No, I didn't.

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09:34:51 11 Q. Did anyone perform any literature searches for
09:34:56 12 you?
09:34:56 13 A. I had a consultant who works for me pulling
09:35:02 14 information out and reviewing documents, and he and I
09:35:07 15 would sit and discuss them and then I would read them
09:35:10 16 myself, but he would generally review documents, but
09:35:16 17 then I decided whether or not they would be of
09:35:19 18 sufficient information for me to read.
09:35:22 19 Q. Who is this?
09:35:23 20 A. General Arthur Blades.
09:35:25 21 Q. Does he work for your company, Verhalen &
09:35:29 22 Associates?
09:35:31 23 A. He's independent.
09:35:32 24 Q. So he's not an employee of yours?
09:35:34 25 A. No, that's correct.

09:35:35 1 Q. Who decided what documents -- his name again
09:35:40 2 was?
09:35:41 3 A. General Arthur C. Blades. He's retired.
09:35:46 4 Q. Who decided what documents General Blades would
09:35:51 5 review?
09:35:52 6 A. I generally gave him guidelines; looked for
09:35:58 7 articles dealing with such and such subject and he
09:36:00 8 would go to the National Library of Medicine or the
09:36:05 9 Library of Congress and review articles and things
09:36:09 10 that fell within the general umbrella of what
09:36:12 11 guidance I had given him.
09:36:15 12 He would come back to me and then talk about it,
09:36:18 13 and if they were worth while I would send him back to
09:36:21 14 get them.
09:36:22 15 Q. What is his area of expertise?
09:36:24 16 A. He is a logistician.
09:36:28 17 Q. What does that mean?
09:36:30 18 A. Well, he's a logistics expert for the -- he was
09:36:36 19 the number three person in the Marine Corp. when he
09:36:39 20 retired, and he was responsible for general policy,
09:36:42 21 logistics and manpower.
09:36:44 22 Q. Does he have a background in statistics?
09:36:46 23 A. No, he doesn't.
09:36:48 24 Q. Does he have a background in epidemiology?
09:36:50 25 A. No, he doesn't.

09:36:52 1 Q. Did he review drafts of your expert report?
09:37:00 2 A. No, he didn't. Matter of fact, there were no
09:37:06 3 drafts to review. I did it on my computer so I
09:37:09 4 didn't print anything out until I was satisfied.
09:37:12 5 Q. Are you telling me that the only printed out
09:37:17 6 version of your expert report is exactly what we see
09:37:19 7 here in Exhibit 3301?
09:37:21 8 A. Yes, that's correct.
09:37:22 9 Q. Just to be clear, I mean by only printed out,
09:37:31 10 whether it exists today or not you, never printed out
09:37:34 11 any other version or draft of the expert report
09:37:37 12 except this one hard copy we see in Exhibit 3301?
09:37:41 13 A. To the best of my recollection, no, I didn't. I
09:37:44 14 don't normally. I work on the computer until I'm
09:37:47 15 happy with something then I print it out.
09:37:49 16 Q. Did anyone review any of the drafts or versions
09:37:53 17 on the computer of your expert report prior to

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09:37:56 18 printing out the final version?
09:37:58 19 A. No.
09:37:58 20 Q. Was the final version printed out on the day
09:38:07 21 that you signed it, June 26th?
09:38:09 22 A. It probably would have been. I might possibly
09:38:13 23 have printed it the day before and dated it on this
09:38:16 24 so that I could look at it carefully before I signed
09:38:19 25 it.

09:38:19 1 Q. Prior to the time you signed it had anyone other
09:38:24 2 than yourself read any -- all or any portion of this
09:38:28 3 report?
09:38:28 4 A. No.
09:38:29 5 Q. Did you request any documents from any of the
09:38:47 6 defendants in this case in connection with your work
09:38:51 7 on this case?
09:38:53 8 A. I may have requested some when I saw a list that
09:39:04 9 had come through about a week ago. I forget what you
09:39:08 10 call the list. It's a -- is it a notice?
09:39:13 11 MR. WILSON: Pre-designation of
09:39:14 12 documents?
09:39:17 13 THE WITNESS: Pre-designation. And
09:39:18 14 there were two or three documents on there. They
09:39:21 15 were provided.
09:39:22 16 BY MR. LOVE:
09:39:22 17 Q. Other than the documents that were
09:39:24 18 pre-designated by me or my partners for this
09:39:29 19 deposition did you request any documents from the
09:39:32 20 defendants or they're attorneys?
09:39:34 21 A. Not that I recall.
09:39:35 22 Q. Did you review any documents in any depository
09:39:43 23 of documents that exist in this case?
09:39:45 24 A. No. I don't have access to a depository.
09:39:49 25 Q. Did you request any access to such a depository?

09:39:54 1 A. No.
09:39:54 2 Q. You didn't request any documents from anyone
09:39:57 3 other than General Blades then I take it?
09:40:00 4 A. Not that I recall.
09:40:02 5 Q. Have you been involved in any other tobacco
09:40:28 6 cases besides Minnesota and Mississippi?
09:40:30 7 A. Yes.
09:40:31 8 Q. Which?
09:40:33 9 A. Texas.
09:40:33 10 Q. When did you first become involved in the Texas
09:40:36 11 case?
09:40:36 12 A. Difficult to say. Probably early in the year.
09:40:43 13 May have been around the same time or very shortly
09:40:45 14 after getting involved in the Mississippi case.
09:40:54 15 Q. So you became involved in the Texas case prior
09:40:58 16 to becoming involved as you defined it in the
09:41:00 17 Minnesota case?
09:41:01 18 A. That's correct.
09:41:02 19 Q. How did you become involved?
09:41:06 20 A. I think that's correct. The same way, I was
09:41:11 21 asked by Mr. Borman if I would be willing to be an
09:41:15 22 expert witness in that case.
09:41:24 23 Q. Did you prepare an expert report in the Texas
09:41:27 24 case?

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09:41:28 25 A. Yes, I did.

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09:41:28 1 Q. When did you prepare that?
09:41:39 2 A. I think that had to be ready before this one
09:41:46 3 did. I don't recall the exact date, but it seems to
09:41:51 4 me it might have been about a month or so before
09:41:54 5 this.
09:42:06 6 Q. Does the Texas report just discuss the same
09:42:11 7 general areas as the Minnesota report?
09:42:13 8 A. To the extent that some of the issues were the
09:42:17 9 same, but they had a different model.
09:42:28 10 Q. Did you review your expert report in the Texas
09:42:31 11 case in all or any part in performing your work on
09:42:35 12 the Minnesota case?
09:42:37 13 A. No, not that I recollect.
09:42:38 14 Q. Did you ever request any listing of documents
09:43:01 15 that are available in this case, the Minnesota case?
09:43:03 16 A. No, I haven't.
09:43:06 17 Q. You've never seen such a listing I take it?
09:43:09 18 A. No.
09:43:10 19 Q. Did you review any computer disks or printouts
09:43:35 20 from computer disks of the work performed by Drs.
09:43:42 21 Zeger and Miller and Wyant in connection with their
09:43:47 22 expert report which is Exhibit 2321?
09:43:51 23 A. No, I didn't.
09:43:52 24 Q. So in connection with that expert report of
09:43:56 25 Zeger, Wyant and Miller, Exhibit 2321, the only

09:44:01 1 documents of theirs or information of theirs that you
09:44:05 2 reviewed is what we see here in the exhibit?
09:44:08 3 A. Well, plus the one I got the other day on
09:44:12 4 Wyant's update or addition.
09:44:13 5 Q. So those two reports are all that you saw in
09:44:18 6 connection with the work that they've performed in
09:44:20 7 this case?
09:44:21 8 A. That's -- to the best of my recollection, that's
09:44:25 9 correct.
09:44:25 10 Q. Did you know that there had been produced to the
09:44:29 11 defendants in this case other information that they
09:44:33 12 had prepared in connection with they're report, 2321?
09:44:37 13 A. Not specifically, no. I knew there were an
09:44:40 14 awful lot of documents available in the Minnesota
09:44:43 15 case.
09:44:44 16 Q. Did you ever ask to see any of the documents
09:44:46 17 that they might have produced in addition to their
09:44:50 18 expert report?
09:44:51 19 A. No, I didn't. Quite frankly the time available
09:44:55 20 to get into this precluded my asking for any more
09:45:01 21 than I had on the plate at that time.
09:45:04 22 Q. Do you think it's important to rendering an
09:45:14 23 expert opinion in this case for you to actually
09:45:17 24 review the further information that Drs. Zeger, Wyant
09:45:21 25 and Miller produced with their expert report?

09:45:25 1 A. It could be relevant, yes.
09:45:28 2 Q. You don't know one way or the other because you
09:45:31 3 don't know what it is, right?

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09:45:32 A. That's correct.
09:45:34 Q. Did you include any qualifications in your
09:45:39 expert report about reviewing that information before
09:45:44 reaching final conclusions?
09:45:46 A. I don't think I did, no.
09:45:48 Q. Is that something that you would like to do now?
09:45:51 A. No, I think other than to say overall for the
09:45:55 materials I've reviewed these are my opinions.
09:45:59 Q. And you don't feel that you have a better
09:46:12 understanding of what they actually performed in
09:46:15 preparing the rest of it?
09:46:16 A. I've got a better understanding of what they
09:46:19 performed, at least some of the methods they used,
09:46:24 for drawing the conclusions that I've drawn.
09:46:28 What I was given here was given to me as a
09:46:31 representative of their final report.
09:46:33 Q. Other than the documents we see in Exhibit 3301,
09:47:24 your expert report and the various attachments, did
09:47:28 you have any other notes or handwritings,
09:47:31 calculations or other documents at the time you
09:47:35 completed your report that you had prepared or
09:47:39 reviewed in connection with your work on the

09:47:44 Minnesota case?
09:47:44 A. Well, if -- just to make sure I understand the
09:47:50 question, did I have any notes that I had prepared or
09:47:53 reviewed while doing this?
09:47:55 Q. Yes. Let's take notes first. Did you have any
09:48:00 handwritten notes that you had prepared while doing
09:48:03 your work on the Minnesota case at the time you
09:48:06 completed your expert report?
09:48:08 A. Not necessarily. At the very most what I do
09:48:11 when I'm reviewing a document, I may jot down key
09:48:16 words or pages or something like that, and then when
09:48:19 I'm going back I'll review those things.
09:48:22 When I'm done -- when I start putting things on
09:48:26 my computer, the paper gets crumpled up and thrown.
09:48:31 There is no reason to go back to it.
09:48:33 Q. So when you completed your expert report on or
09:48:36 about June 26th, 1997 it's your testimony that you
09:48:40 had no handwritten notes that you would have made
09:48:43 while working on the Minnesota case?
09:48:45 A. That's correct.
09:48:45 Q. Did you have any computer notes at that time?
09:48:52 A. No. The only notes I would have had would have
09:48:58 been the earlier draft versions of this. I tend to
09:49:02 sit and compose at the computer terminal, then I go
09:49:07 back through it and make changes.

09:49:12 So what may have started out as notes or an
09:49:15 outline eventually fleshes out into an article or a
09:49:18 paper.
09:49:18 Q. At the time you completed your report on or
09:49:23 about June 26th did you have any other materials on
09:49:31 your computer that still existed that you could
09:49:34 recall previous versions of the report or notes or
09:49:38 outlines?
09:49:38 A. No, because I don't create new versions. What I
09:49:42 do is I take the original typewritten version that's

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09:49:47 11 electronically on the computer and that's the one I
09:49:50 12 modify.
09:49:51 13 I don't save this one and then go to another one
09:49:54 14 and make changes. When I make changes, those are
09:49:58 15 changes I'm going to make.
09:49:58 16 Q. Did you save any of that information on any
09:50:02 17 disks?
09:50:04 18 A. Yeah, this document is on a disk.
09:50:06 19 Q. The final report is on a disk?
09:50:09 20 A. And it's identical to what you see here.
09:50:12 21 Q. Are there any other drafts of the report or
09:50:15 22 computer notes or outlines that you saved on a disk?
09:50:18 23 MR. BORMAN: I'll object to the question as
09:50:21 24 asked and answered.
09:50:23 25 THE WITNESS: No, there aren't.

09:50:27 1 BY MR. LOVE:
09:50:27 2 Q. Did you make any calculations in connection with
09:50:31 3 your work on the Minnesota case?
09:50:34 4 A. Not that I recall. Again, if I did it would
09:50:37 5 have been simple to sit down and figure out on paper
09:50:41 6 what a percentage was or a hand calculator and type
09:50:45 7 it in, but that paper along with everything else was
09:50:48 8 scrap when I was done.
09:50:50 9 Q. So any calculations that existed in any kind of
09:50:54 10 form on June 26th are just those that are in your
09:50:59 11 final report?
09:51:00 12 A. That's correct.
09:51:00 13 Q. How much time have you spent working on the
09:51:18 14 Minnesota case?
09:51:18 15 A. Difficult to say. Probably --
09:51:27 16 MR. BORMAN: Excuse me. Is that a
09:51:29 17 fair question?
09:51:30 18 MR. WILSON: The question is the
09:51:32 19 amount of time spent.
09:51:36 20 THE WITNESS: Maybe two hundred hours,
09:51:40 21 more or less.
09:51:41 22 BY MR. LOVE:
09:51:41 23 Q. Have you ever gone back to your computer records
09:51:45 24 of how much time you spent for a particular client to
09:51:51 25 add up at some point in time how much time you had

09:51:54 1 spent on this Minnesota case?
09:51:59 2 MR. BORMAN: Do you understand the
09:52:01 3 question?
09:52:03 4 THE WITNESS: Yeah, I understand the
09:52:04 5 question as have I ever gone back to my computer
09:52:09 6 records on time spent in order to total them up. I
09:52:12 7 would have done so at the end of each month in order
09:52:15 8 to submit a bill.
09:52:16 9 BY MR. LOVE:
09:52:16 10 Q. Do you recall how many hours you spent at the
09:52:20 11 end of June, 1997?
09:52:21 12 A. Not offhand. It was probably around a hundred.
09:52:24 13 Q. How about the end of July?
09:52:26 14 A. Probably about the same, little more, little
09:52:29 15 less as I said.
09:52:29 16 Q. Have you added up the hours for August yet?
09:52:32 17 A. No.

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09:52:32 18 Q. Do you have any estimation of how many hours you
09:52:36 19 spent in August?
09:52:36 20 A. Maybe about the same. It's very difficult to
09:52:39 21 know. I service several clients simultaneously so
09:52:44 22 it's -- any given day and my days are fairly long.
09:52:48 23 I may serve as many as three or four different
09:52:56 24 clients.
09:53:02 25 Q. When did you first start writing your expert

09:53:06 1 report in this case?
09:53:07 2 A. My guess would be two or three days before it
09:53:14 3 was completed, maybe a week.
09:53:22 4 Q. Prior to that time had you made outlines of your
09:53:25 5 report on the computer?
09:53:26 6 A. No.
09:53:26 7 Q. So this two or three days to maybe a week prior
09:53:31 8 to June 26th, is that the first time you started
09:53:35 9 putting pen to paper, so to speak, on the computer
09:53:41 10 for this report?
09:53:42 11 A. Yes. Before you ask your next question, if I
09:54:26 12 may, I would like to take a break.
09:54:28 13 Q. Certainly.
09:54:32 14 (Recess taken.)
09:54:34 15 BY MR. LOVE:
09:54:34 16 Q. Dr. Verhalen, I had noticed in your expert
10:00:32 17 report that you have been deposed in other cases,
10:00:35 18 correct?
10:00:35 19 A. Yes.
10:00:35 20 Q. Nonetheless, I should have told you at the
10:00:39 21 beginning that if you ever need a break please, let
10:00:42 22 me know and you can certainly take a break.
10:00:44 23 A. Thank you.
10:00:45 24 Q. And also if I ask you any questions that you
10:00:48 25 don't understand, let me know and I'll try and phrase

10:00:51 1 it in a way that makes more sense to you.
10:00:54 2 A. Fine.
10:00:54 3 Q. And if you do answer it, I am going to assume
10:00:59 4 you understand it; is that okay?
10:01:01 5 A. Fine.
10:01:02 6 Q. If you look at page 6 of your expert report,
10:01:06 7 Exhibit 3301, it's sort of the end of the section
10:01:10 8 that you call introduction.
10:01:13 9 A. Yes.
10:01:13 10 Q. You state that your review of plaintiffs'
10:01:28 11 materials necessary on going, second sentence?
10:01:33 12 A. Yes.
10:01:34 13 Q. You've already told me about your recent short
10:01:40 14 review of Dr. Wyant's second report.
10:01:44 15 A. Yes.
10:01:45 16 Q. That's something that's happened since the time
10:01:47 17 you wrote your expert report, correct?
10:01:49 18 A. Yes.
10:01:50 19 Q. What other ongoing review have you conducted of
10:01:54 20 any materials provided by plaintiffs since the time
10:01:57 21 you wrote your expert report?
10:01:59 22 A. I think that's about it. If anything else comes
10:02:11 23 to light, I'll let you know.
10:02:13 24 Q. You haven't made any further review of the

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10:02:17 25 Zeger, Wyant, Miller expert report since you wrote

10:02:22 1 your report?
10:02:24 2 A. That's correct.
10:02:24 3 Q. And I take it you haven't made any further
10:02:30 4 review of Dr. Samet's expert report since you wrote
10:02:33 5 your expert report?
10:02:35 6 A. That's correct.
10:02:39 7 Q. Have other documents come to your attention
10:02:44 8 since the time you wrote your expert report that you
10:02:47 9 consider relevant to the opinions that you're
10:02:50 10 offering in this case?
10:02:51 11 A. I don't think so.
10:02:59 12 Q. Did you ask General Blades to find any
10:03:04 13 additional documents since the time you wrote your
10:03:06 14 expert report?
10:03:07 15 A. No.
10:03:08 16 Q. Have you yourself made any investigation or
10:03:11 17 search for additional documents since the time you
10:03:14 18 wrote your expert report?
10:03:15 19 A. No, I haven't.
10:03:16 20 Q. Have you seen any expert reports written by
10:03:29 21 other experts for the defendants in the Minnesota
10:03:33 22 litigation?
10:03:34 23 A. Yes.
10:03:35 24 Q. What reports have you seen?
10:03:38 25 A. There were reports by Dr. Wecker.

10:03:51 1 Q. Wecker?
10:03:59 2 A. And Kip Viscusi, Judith something, I can't
10:04:18 3 remember.
10:04:19 4 Q. Overall?
10:04:20 5 A. Yes, Judith Overall. I think that's it.
10:04:25 6 Q. When did you receive those reports?
10:04:29 7 A. Just I think the other day, yesterday.
10:04:33 8 Q. Just looking back you had told me you had seen
10:04:45 9 Dr. Wyant's second report and you thought it was just
10:04:48 10 yesterday, then you thought it was more like a week
10:04:50 11 ago?
10:04:50 12 A. That's correct.
10:04:51 13 Q. Did these reports of Wecker, Viscusi and Overall
10:04:55 14 come about the same time as Dr. Wyant's?
10:04:58 15 A. No.
10:04:58 16 Q. Did these three reports come together to you?
10:05:01 17 A. No.
10:05:01 18 Q. So you received them at different times?
10:05:07 19 A. My recollection is that I just saw the Overall
10:05:11 20 report for the first time yesterday and the Viscusi
10:05:16 21 report.
10:05:17 22 Q. So Viscusi and Overall you received yesterday?
10:05:20 23 A. Mm-hmm.
10:05:21 24 Q. Do you actually have copies that are yours or
10:05:27 25 did you just see the report?

10:05:28 1 A. No, I just saw the report.
10:05:30 2 Q. What about the report of Wecker, did you see
10:05:34 3 that prior to yesterday?

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10:05:35 4 A. Yes.
10:05:43 5 Q. When did you first see the Wecker report?
10:05:45 6 A. I don't recall. It might have been about a week
10:05:49 7 ago.
10:05:49 8 Q. Did you receive a copy of that?
10:05:51 9 A. Yes.
10:05:51 10 Q. Have you read it?
10:05:57 11 A. I have scanned through it, yes.
10:06:00 12 Q. Have you formed any opinions about it?
10:06:09 13 A. Not really. I've just scanned it.
10:06:14 14 Q. Do you have any plans to do anything further
10:06:18 15 with the Wecker report?
10:06:20 16 A. Probably when I have an opportunity to sit down
10:06:22 17 and read it very carefully.
10:06:27 18 Q. For what purpose?
10:06:29 19 A. Just to see what his general position is and
10:06:35 20 what his supports are.
10:06:55 21 Q. Have you been asked to offer any opinions about
10:06:57 22 the Wecker report?
10:06:58 23 A. No, I haven't.
10:07:00 24 Q. Did you request copies of any of the expert
10:07:06 25 reports of other experts in this case?

10:07:08 1 A. No, I didn't.
10:07:09 2 Q. Did you request copies of the Wecker, Viscusi or
10:07:12 3 Overall report?
10:07:13 4 A. Not that I recall. I wasn't even aware of
10:07:16 5 the --
10:07:21 6 Q. Overall?
10:07:23 7 A. -- Viscusi and Overall report.
10:07:26 8 Q. Was the Wecker report something that was sent to
10:07:28 9 you or something that you requested?
10:07:29 10 A. I think it was just sent to me.
10:07:32 11 Q. With any kind of cover letter?
10:07:34 12 A. No, just a card, business card.
10:07:36 13 Q. From?
10:07:37 14 A. From Mr. Thompson.
10:07:39 15 Q. Have you ever seen an expert report of Dr.
10:07:46 16 Foster?
10:07:47 17 A. Yes.
10:07:48 18 Q. When did you first see that?
10:07:55 19 A. I don't recall. Sometime within the last couple
10:07:58 20 of weeks I suppose.
10:07:59 21 Q. Do you have a copy of that?
10:08:01 22 A. I don't have it with me.
10:08:02 23 Q. No, but in your possession at your office or
10:08:07 24 some place.
10:08:08 25 A. There would be one at my office, yes.

10:08:10 1 Q. So you received a copy of that in the last
10:08:13 2 couple of weeks; is that correct?
10:08:15 3 A. I don't recall when I would have received it.
10:08:16 4 Q. Can you say whether it was before or after the
10:08:22 5 Fourth of July?
10:08:23 6 A. No, I really couldn't.
10:08:25 7 Q. Have you read that report?
10:08:31 8 A. Again, I've scanned it.
10:08:32 9 Q. Did you come to any conclusions about it?
10:08:42 10 A. Very difficult to come to conclusions on the

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10:08:44 basis of the first scan.
10:08:48 Q. So I take it you haven't come to any conclusions
10:08:51 about it?
10:08:52 A. That's correct.
10:08:53 Q. Do you plan to do anything further with the
10:08:55 Foster report?
10:08:56 A. I will probably sit down and read it very
10:08:59 carefully between now and trial.
10:09:01 Q. For what purpose?
10:09:07 A. To better understand what his position is and
10:09:12 what his support is.
10:09:13 Q. Have you been asked for your opinions about the
10:09:18 Foster report?
10:09:18 A. No, I haven't.
10:09:19 Q. Have you seen a report by McCall and Ahlberg?

10:09:28 A. I have, but that's not one that I've reviewed
10:09:34 yet.
10:09:36 Q. When did you first see it?
10:09:38 A. I'm not sure when it came in. It may have been
10:09:41 about the same time as the Foster report.
10:09:46 Q. So you haven't even scanned that one yet?
10:09:48 A. No, I don't think so. If anything I've looked
10:09:51 at the front page.
10:09:53 Q. Can you think of any other reports of experts
10:10:00 for the defendants in this case besides Wecker,
10:10:03 Viscusi, Overall, Foster and McCall and Ahlberg?
10:10:10 A. Offhand, no.
10:10:11 Q. Have you had any discussions with any of those
10:10:17 other experts?
10:10:18 A. No.
10:10:18 Q. Any communications at all with them?
10:10:20 A. No.
10:10:21 Q. Do you know any of them professionally?
10:10:26 A. No.
10:10:27 Q. What did you do to prepare for your deposition
10:10:49 today, sir?
10:10:49 A. I reread my own testimony and I reread some of
10:10:57 the documents that lie behind them.
10:11:00 Q. When you say your testimony, do you mean your
10:11:03 expert report?

10:11:03 A. Yes.
10:11:03 Q. Did you review anything else?
10:11:06 A. Not that I recollect. I mean I went through
10:11:12 what I have.
10:11:12 Q. How long did you spend preparing for your
10:11:20 deposition?
10:11:24 A. Couple of days.
10:11:26 Q. When did you start?
10:11:28 A. Monday, Labor Day.
10:11:33 Q. Did you meet with anyone to prepare for your
10:11:38 deposition?
10:11:39 A. Just yesterday.
10:11:39 Q. Who did you meet with?
10:11:40 A. Mr. Borman and Mr. Thompson.
10:11:46 Q. And that was yesterday?
10:11:47 A. That's correct.
10:11:48 Q. Have you seen any transcripts of other

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10:11:55 18 depositions in this Minnesota case?
10:12:02 19 A. Not that I recall.
10:12:03 20 Q. For example, have you seen a transcript of the
10:12:09 21 deposition of Leonard Miller in this Minnesota case?
10:12:12 22 A. I don't think I saw it in this Minnesota case.
10:12:16 23 Q. What about the transcript of the deposition of
10:12:18 24 Dr. Wyant and --
10:12:20 25 A. No.

10:12:21 1 Q. Or Dr. Samet?
10:12:24 2 A. I think I saw Samet's deposition.
10:12:33 3 Q. When did you see that?
10:12:35 4 A. I don't recall. It would have been maybe a
10:12:38 5 month ago.
10:12:39 6 Q. If I suggest to you that he was deposed on
10:13:01 7 August 14th and 15th would that help you recall when
10:13:05 8 you saw his transcript?
10:13:06 9 A. No, it really wouldn't. It would certainly say
10:13:10 10 I couldn't have seen it before that.
10:13:12 11 Q. But you're pretty sure it was the deposition in
10:13:17 12 this case?
10:13:18 13 A. I think so.
10:13:18 14 Q. Did you make any notes of that transcript?
10:13:21 15 A. No.
10:13:22 16 Q. Did you discuss that transcript with anyone?
10:13:25 17 A. No.
10:13:27 18 Q. Do you have any opinions about Dr. Samet's
10:13:32 19 testimony?
10:13:33 20 A. No.
10:13:37 21 Q. Was there anything in his testimony that you
10:13:44 22 disagreed with?
10:13:45 23 A. I didn't say I disagreed with any of it.
10:13:48 24 Q. I'm asking you the question, did you see
10:13:52 25 anything in his testimony that you did --

10:13:53 1 A. Oh, I thought you said what was the --
10:13:56 2 Q. When you read his testimony did you find
10:13:59 3 anything that you disagreed with?
10:14:01 4 A. I would have disagreed perhaps with some of the
10:14:08 5 firmness of the conclusions that he might have drawn.
10:14:11 6 Q. What do you mean by that?
10:14:13 7 A. That sometimes evidence which is suggestive
10:14:23 8 epidemiologically might seem more compelling than one
10:14:29 9 person than another depending on your perspective on
10:14:33 10 the data that go into it.
10:14:37 11 Q. Do you disagree with his conclusions that
10:14:42 12 smoking causes lung cancer?
10:14:44 13 A. I would have to say that smoking may cause lung
10:14:55 14 cancer, but it doesn't necessarily cause lung cancer.
10:14:59 15 Q. Talking about for an individual or for a
10:15:02 16 population?
10:15:03 17 A. For an individual. For a -- a population
10:15:06 18 doesn't get lung cancer.
10:15:08 19 Q. Does smoking cause some people in the population
10:15:11 20 of the United States to get lung cancer?
10:15:13 21 A. It may well.
10:15:14 22 Q. Is it that it may well cause some people to get
10:15:21 23 lung cancer or that it does cause some people to get
10:15:25 24 lung cancer?

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10:15:26 25 A. It may well cause it. I don't think anybody can

10:15:29 1 say definitively that any particular case was caused
10:15:32 2 by smoking when there is so many other things that
10:15:36 3 people have been exposed to.
10:15:40 4 Q. Would you agree that some percentage of the lung
10:15:45 5 cancer cases in the United States without knowing
10:15:48 6 which ones they might be by individual were caused by
10:15:52 7 smoking?
10:15:53 8 A. They might be.
10:15:57 9 Q. Are you saying that it might be that zero
10:16:01 10 percent of the lung cancer cases in the United States
10:16:06 11 were caused by smoking?
10:16:07 12 A. Well, certainly that's an outside possibility.
10:16:10 13 I don't think that it would necessary be zero
10:16:12 14 percent.
10:16:13 15 I would agree there might be some percentage
10:16:16 16 that would be caused by smoking, but smoking is
10:16:20 17 usually not the only thing people are exposed to.
10:16:25 18 Q. But it might be -- it's possible that none of
10:16:29 19 the lung cancer cases in the United States have been
10:16:32 20 caused by smoking; is that your testimony?
10:16:36 21 A. Theoretically it could be.
10:16:38 22 Q. As a practical matter is it your opinion that
10:16:41 23 it's possible that none of the lung cancer cases in
10:16:45 24 the United States were caused by smoking?
10:16:46 25 A. It's a practical matter. It's probably not

10:16:50 1 likely, but there is no way of knowing for sure.
10:16:53 2 Q. When you reviewed your expert report in
10:17:11 3 preparation for the deposition did you find any
10:17:14 4 errors or mistakes?
10:17:17 5 A. Not that I noticed. Now, if -- I will say the
10:17:28 6 possibility when you're manipulating numbers you
10:17:32 7 might make a mistake, but I didn't notice any
10:17:37 8 offhand.
10:17:38 9 Q. And in reviewing your expert report in
10:17:42 10 preparation for your deposition did you find anything
10:17:45 11 that you would prefer to say differently than is set
10:17:48 12 forth in your expert report?
10:17:50 13 A. Nope.
10:17:54 14 Q. And as of this time are you prepared to author
10:18:01 15 any expert opinions other than the ones set forth in
10:18:04 16 your expert report, Exhibit 3301, in this case?
10:18:12 17 A. The question if I understand it is am I prepared
10:18:15 18 to present any other expert opinions besides those
10:18:20 19 which are in my report?
10:18:22 20 Q. Yes.
10:18:23 21 A. At this time?
10:18:24 22 Q. Yes.
10:18:24 23 A. No.
10:18:25 24 Q. Have you seen any summary of the deposition
10:18:51 25 testimony of any of the witnesses in this case?

10:18:54 1 A. Not that I recall.
10:18:55 2 Q. Have you seen any descriptions at all of the
10:19:01 3 deposition testimony of any of the witnesses other

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10:19:03 4 than the transcript of Dr. Samet that you told me you
10:19:08 5 did see?
10:19:09 6 A. Not that I recall.
10:19:10 7 Q. In tab 4 of your expert report, Exhibit 3301,
10:19:35 8 other matters in which you have given expert
10:19:40 9 testimony; is that correct?
10:19:40 10 A. Yes.
10:19:41 11 Q. The first one then on that list is July 19th,
10:19:47 12 1996 deposition in Duvall versus Honda case; is that
10:19:54 13 correct?
10:19:54 14 A. That's correct.
10:19:55 15 Q. What was that case about?
10:19:56 16 A. It was an all terrain vehicle case.
10:19:58 17 Q. Who were you acting as an expert for?
10:20:01 18 A. For Honda.
10:20:03 19 Q. What was the subject matter of your testimony?
10:20:06 20 A. That the analysis done by the Consumer Product
10:20:09 21 Safety Commission on all terrain vehicles was flawed.
10:20:15 22 Q. Flawed in what way?
10:20:17 23 A. They were not sufficient for the Commission to
10:20:22 24 have made a determination that three-wheeled all
10:20:28 25 terrain vehicles were necessarily more hazardous than

10:20:31 1 any other recreational vehicles.
10:20:33 2 Q. Was it your opinion that the Consumer Product
10:20:35 3 Safety Commission did not have enough data to make
10:20:39 4 that determination?
10:20:40 5 A. No, it was my opinion that the Consumer Product
10:20:42 6 Safety Commission did not analyze all the data it had
10:20:47 7 properly and -- to make that determination.
10:20:50 8 And you're correct, it didn't -- it did not have
10:20:55 9 certain other data that would relate to comparative
10:20:59 10 use.
10:21:02 11 Q. Were those the two major aspects of your
10:21:06 12 testimony, one that the Commission did not properly
10:21:09 13 analyze all the data it had, and two, that it did not
10:21:13 14 have sufficient data on comparison with other
10:21:19 15 vehicles?
10:21:19 16 A. That's correct.
10:21:20 17 Q. Did you analyze the data that was available to
10:21:24 18 the Consumer Product Safety Commission in that case?
10:21:28 19 A. I personally did not analyze the data that went
10:21:32 20 into the final report.
10:21:34 21 Q. How did you conclude that the Commission
10:21:38 22 incorrectly analyzed the data that it had?
10:21:43 23 A. The Commission did not authorize the collection
10:21:47 24 of exposure information that I felt was necessary to
10:21:50 25 make a fair comparison between all terrain vehicles

10:21:54 1 and recreational vehicles.
10:21:56 2 Q. What does exposure data mean?
10:21:59 3 A. Exposure is the degree to which individuals were
10:22:02 4 exposed to road or used different kinds of
10:22:05 5 recreational equipment.
10:22:07 6 Q. So that's an example of the data that the
10:22:10 7 Commission didn't have?
10:22:12 8 A. That's correct.
10:22:12 9 Q. Which is what I just listed as sort of the
10:22:16 10 second major aspect of your testimony in the case,

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10:22:19 correct?
10:22:19 A. Not really. It's the principal aspect.
10:22:23 Q. So lack of data was the principal aspect of your
10:22:27 testimony in this Duvall versus Honda case?
10:22:30 A. No, I'm not sure that's a fair characterization.
10:22:34 Lack of data and analysis of the data they did have
10:22:37 led to a flawed analysis, an incomplete analysis.
10:22:41 Q. Can you tell me what mistakes or flaws existed
10:22:47 in the Commission's analysis of the data that they
10:22:50 did have?
10:22:52 A. When they analyzed the data and they did a
10:22:55 comparison for all terrain vehicles with three wheel
10:23:02 bikes and snowmobiles they did it on.
10:23:05 The cases reported alone which would be
10:23:07 numerated data only and came to the conclusions

10:23:11 preliminarily that all terrain vehicles were ten
10:23:14 times more hazardous than snowmobiles and twice as
10:23:20 hazardous as trail bikes.
10:23:23 Q. And that was flawed because they needed
10:23:27 denominator data as well?
10:23:29 A. That's correct.
10:23:30 Q. And that would be the exposure data you're
10:23:33 talking about?
10:23:34 A. That's correct.
10:23:34 Q. The second Item of testimony on your report is a
10:23:49 September 6th, 1996 deposition in the Hagy versus
10:23:55 Honda case.
10:23:56 A. Yes.
10:23:56 Q. I take it you were an expert for Honda?
10:24:01 A. That's correct.
10:24:02 Q. What was the subject of your expert testimony in
10:24:06 that case?
10:24:06 A. Same issue.
10:24:08 Q. All terrain vehicles?
10:24:11 A. That's correct.
10:24:11 Q. Did you have the same opinions with respect to
10:24:15 Consumer Product Safety Commission's flaws in
10:24:18 analyzing data and failure to gather enough data?
10:24:23 A. Yes.
10:24:23 Q. Was there any substantial differences between

10:24:27 your testimony in those cases, the Duvall case and
10:24:34 the Hagy case?
10:24:35 A. No.
10:24:35 Q. Was the same law firm representing Honda in both
10:24:43 cases?
10:24:44 A. No, they weren't.
10:24:45 Q. Do you recall which firm represented Honda in
10:24:48 the Duvall case?
10:24:49 A. That would have been McCarroll, Oakes, Hartline
10:25:00 in Dallas -- or in Austin.
10:25:03 Q. What firm represented Honda in the Hagy case?
10:25:06 A. Chebick & Chebick in Oklahoma City.
10:25:13 Q. The third item of testimony on your list is a
10:25:18 September 25th, 1996 trial testimony in that same
10:25:22 Hagy versus Honda case?
10:25:23 A. That's correct.
10:25:24 Q. Was there any difference between your trial

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10:25:28 18 testimony and what you've described as your
10:25:30 19 deposition testimony in that case?
10:25:32 20 A. No, there wasn't.
10:25:33 21 Q. What was the result of that trial?
10:25:42 22 A. I think they settled.
10:25:53 23 Q. Was there an expert for the plaintiff in that
10:25:56 24 case who was offering opinions about the validity of
10:26:01 25 the CPSC's conclusions based on the data that you

10:26:07 1 reviewed?
10:26:07 2 A. Yes.
10:26:08 3 Q. Who was that?
10:26:08 4 A. Stuart Statler.
10:26:12 5 Q. Do you know -- is he -- does he work for a
10:26:21 6 company or is he in business for himself?
10:26:24 7 A. He's an independent consultant.
10:26:26 8 Q. Where does he work out of?
10:26:28 9 A. Out of Washington D.C.
10:26:31 10 Q. The fourth item of testimony is October 1st,
10:26:40 11 1996 testimony is Gamble versus Northern Virginia
10:26:43 12 Ryan, correct?
10:26:44 13 A. That's correct.
10:26:45 14 Q. What was the subject matter of your expert
10:26:48 15 opinions in that case?
10:26:49 16 A. The existence of -- the inexistence of data that
10:27:04 17 would suggest that window screens could be relied
10:27:09 18 upon to hold somebody -- a child inside a window.
10:27:14 19 Q. Who were you acting as an expert witness for in
10:27:18 20 that case?
10:27:18 21 A. Northern Virginia Ryan.
10:27:20 22 Q. What is that?
10:27:21 23 A. That's a real estate and development firm.
10:27:31 24 Q. And the data that you were discussing was data
10:27:38 25 on the ability of window screens to prevent a child

10:27:44 1 from falling out the window?
10:27:44 2 A. The data were actually data that related to
10:27:48 3 falls from windows in association with window screens
10:27:52 4 where window screens were identified as one of the
10:27:56 5 products involved in the case.
10:27:57 6 Q. What was the source of that data?
10:27:58 7 A. I'm sorry?
10:27:59 8 Q. What was the source of that data?
10:28:01 9 A. The Consumer Product Safety Commission.
10:28:03 10 Q. Is that data the Commission gathered while you
10:28:09 11 were with the Commission?
10:28:10 12 A. Partly, and some since I left the Commission.
10:28:12 13 Q. What was your opinion about the validity of that
10:28:18 14 data for drawing the conclusions that were drawn?
10:28:21 15 A. Conclusions drawn by whom?
10:28:23 16 Q. By the plaintiffs.
10:28:25 17 A. That the plaintiff was not correct in drawing
10:28:32 18 the conclusions that window screens should have held
10:28:36 19 the child in because there were no data that
10:28:38 20 suggested that window screens ever were employed as a
10:28:44 21 safety devise.
10:28:50 22 Q. Had the Consumer Product Safety Commission come
10:28:53 23 to any conclusions about that issue?
10:28:54 24 A. Yes.

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10:28:54 25 Q. What were their conclusions?

10:28:56 1 A. Their conclusions were that window screens were
10:29:00 2 not protective devises, they were intended to keep
10:29:03 3 bugs out.
10:29:07 4 Q. And the last item of testimony was November
10:29:10 5 13th, 1996 trial testimony at Gamble versus Jeld-Wen;
10:29:22 6 is that correct?
10:29:23 7 A. That's correct.
10:29:24 8 Q. Is that the same plaintiff as in the previous
10:29:27 9 case?
10:29:27 10 A. Same plaintiff.
10:29:29 11 Q. Who is Jeld-Wen?
10:29:30 12 A. Jeld-Wen is the manufacturer of the window that
10:29:33 13 was used in the home.
10:29:35 14 Q. Was your testimony at trial the same as what
10:29:38 15 you've described as your deposition opinions?
10:29:41 16 A. That's correct.
10:29:42 17 Q. How did that trial result?
10:29:43 18 A. A hung jury.
10:29:48 19 Q. Do you know if there was ever a subsequent
10:29:52 20 retrial?
10:29:53 21 A. There was.
10:29:53 22 Q. Did you testify in that as well?
10:29:55 23 A. I was -- no. They excluded the Consumer Product
10:30:03 24 Safety Commission data from the second trial.
10:30:07 25 Q. Now, I thought you had mentioned earlier today a

10:30:17 1 more resent deposition in some case. Have you given
10:30:22 2 a deposition sometime this year in 1997?
10:30:25 3 A. Yes. I since this report gave a deposition in
10:30:35 4 an all terrain vehicle case for Alaska in Nome,
10:30:45 5 Alaska.
10:30:49 6 Q. Was that a deposition or a trial?
10:30:51 7 A. It was a deposition.
10:30:53 8 Q. Whom were you acting as an expert for?
10:30:57 9 A. Honda.
10:30:58 10 Q. What was the nature of that case?
10:31:05 11 A. It's pretty much the same as occurred in the
10:31:10 12 previous cases.
10:31:11 13 Q. Another ATV case?
10:31:12 14 A. Yes.
10:31:13 15 Q. What was the subject of your opinions in that
10:31:16 16 case in Alaska?
10:31:17 17 A. The same as the previous two cases.
10:31:21 18 Q. The Duvall and Hagy cases?
10:31:25 19 A. That's correct.
10:31:25 20 Q. Any other trial or deposition testimony that
10:31:34 21 you've given besides what was listed here on tab 4 of
10:31:40 22 your expert report, Exhibit 3301, and this Alaska
10:31:43 23 case you just told me?
10:31:45 24 A. No.
10:31:45 25 Q. Prior to any work you performed in the

10:32:01 1 Minnesota, Texas or Mississippi cases against the
10:32:06 2 tobacco industry had you done any work at all in
10:32:11 3 assessing the health effects of tobacco smoking?

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10:32:15 4 A. No.
10:32:16 5 Q. While you were with the CPSC did it conduct any
10:32:25 6 study or analysis of any tobacco products?
10:32:28 7 A. Yes.
10:32:29 8 Q. What products?
10:32:30 9 A. Just cigarettes in general.
10:32:35 10 Q. Did the CPSC investigate the health effects of
10:32:43 11 cigarettes?
10:32:43 12 A. No, they didn't.
10:32:44 13 Q. What did they investigate?
10:32:46 14 A. They investigated cigarettes and their role in
10:32:52 15 causation of fires in homes.
10:32:58 16 Q. Now, did the CPSC while you were there perform
10:33:13 17 any work related to disease as opposed to injury?
10:33:19 18 A. With respect to tobacco?
10:33:23 19 Q. No. Any types of diseases as opposed to
10:33:28 20 injuries.
10:33:28 21 A. From time to time, yes.
10:33:29 22 Q. What types of diseases did the CPSC investigate?
10:33:33 23 A. Anoflaxus (phonetic) which is -- well, not
10:33:38 24 really a disease, it's sort of a toxic reaction.
10:33:41 25 Q. For bee stings and such?

10:33:43 1 A. No, actually from imported goat skin sandals as
10:33:52 2 I recall.
10:33:54 3 Q. Sandals?
10:33:54 4 A. Sandals.
10:33:55 5 Q. Anything else that you can recall?
10:33:57 6 A. Not offhand, no.
10:34:02 7 Q. Were you personally involved in any study or
10:34:06 8 investigation or analysis of disease while you were
10:34:10 9 at CPSC?
10:34:11 10 A. No, I wasn't.
10:34:13 11 Q. Was your focus on injury?
10:34:15 12 A. That's correct.
10:34:15 13 Q. And that's the primary focus of the Commission
10:34:19 14 itself, correct?
10:34:19 15 A. That's correct.
10:34:20 16 Q. What years were you at CPSC?
10:34:28 17 A. From May of 1973 through April, 1995.
10:34:35 18 Q. Prior to the time you joined the CPSC did you
10:34:44 19 have any experience assessing diseases from an
10:34:55 20 epidemiological point of view?
10:34:57 21 A. No.
10:34:58 22 Q. Prior to the time you joined the CPSC had you
10:35:09 23 done epidemiological work on injuries?
10:35:12 24 A. Yes.
10:35:13 25 Q. So prior to May of 1995 you had never performed

10:35:34 1 any epidemiological work on disease; is that correct?
10:35:38 2 A. That's correct.
10:35:44 3 Q. Since May of '95 have you performed any
10:35:48 4 epidemiological work on disease other than any work
10:35:52 5 you performed in Mississippi, Minnesota or Texas
10:35:58 6 cases involving the tobacco cases?
10:36:01 7 A. No, I haven't.
10:36:02 8 Q. Have you had any involvement at all in the
10:36:08 9 Florida case involving the tobacco?
10:36:12 10 A. No.

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10:36:12 Q. Do you consider yourself an expert in the field
10:36:33 of the epidemiology of disease as opposed to --
10:36:37 A. No, I don't. I'm not testifying in the
10:36:40 epidemiology of disease.
10:36:43 Q. Maybe I should have said this at the beginning;
10:36:46 it's hard for the court reporter to take down my
10:36:49 questions and your answers at the same time, and if
10:36:51 you could try to let me finish the question I'll try
10:36:54 to let you finish the answer and we will get a much
10:36:56 better record with the court reporter.
10:37:00 A. Sorry. I thought you were done.
10:37:02 Q. I know. We will just do the best we can. So I
10:37:06 will go back. Do you consider yourself an expert in
10:37:09 the field of epidemiology disease as opposed to
10:37:12 injury?

10:37:13 A. No, I don't.
10:37:14 Q. I believe you went on to say that you were not
10:37:18 offering any expert opinions in the field of
10:37:21 epidemiology in this Minnesota case; is that correct?
10:37:23 A. No, I didn't say that.
10:37:25 Q. I'm sorry. What did you say?
10:37:26 A. I'm not offering opinions on the epidemiology of
10:37:30 disease.
10:37:32 Q. Are you offering any expert opinions on the
10:37:56 epidemiology of injury in this case?
10:37:57 A. No, I am not.
10:37:59 Q. Are you offering any expert opinions in the
10:38:03 field of epidemiology at all in this case?
10:38:06 A. Yes.
10:38:06 Q. What aspect of epidemiology are you offering
10:38:09 expert opinions in?
10:38:10 A. The epidemiologic portions of the models used to
10:38:17 compute the costs attributable -- allegedly
10:38:22 attributable to smoking.
10:38:31 Q. What aspect of the model for smoking do you
10:38:39 consider to be epidemiology?
10:38:43 A. The attributable risk portion of the model.
10:38:54 Q. Any other aspects of the model that you consider
10:38:58 to be within the field of epidemiology?
10:39:00 A. Well, everything that relates or is connected to

10:39:04 the computation of it is attributable.
10:39:14 Q. While you were at the CPSC I think it
10:39:41 investigated numerous products which unfortunately
10:39:45 had resulted in the death of people; is that correct?
10:39:48 A. Some had resulted in deaths, yes.
10:39:55 Q. Did the CPSC come to any conclusions of whether
10:40:00 the product was the cause of any of those deaths?
10:40:05 A. The CPSC came to some conclusions about the
10:40:12 product being sufficiently evident in the
10:40:17 circumstances surrounding death that they might want
10:40:20 to consider in making modifications to the product.
10:40:24 Q. Is that different than determining that the
10:40:27 product caused the death?
10:40:28 A. Yes, it is.
10:40:30 Q. How is it different?
10:40:33 A. The product doesn't reach out and cause a death.
10:40:36 Sometimes it's the way the product is used. That

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helps you determine whether or not it's appropriate to modify the product or the environment in which the product is used or in some way teach the consumer how to use the product more safely as opposed to banning or eliminating a product.

Q. Were there times when the Commission did ban or eliminate a product?

A. What?

Q. Where they did ban or eliminate a product?

A. From time to time, yes.

Q. In those cases would the Commission have come to a conclusion that the product caused injury or death?

A. Yes, but not necessarily on the basis of the epidemiology.

Q. But they would come to the conclusions that it did cause injury or death in some basis?

A. Yes.

Q. Would the epidemiology be part of the basis?

A. It might have been involved in part of the decision, but whether or not it was instrumental in helping them come to that conclusions is a moot point.

Q. Why is it moot?

A. Because very often the Commissioners were making the decision for political or for legal reasons rather than based upon the data.

Q. Was there any product that the Commission investigated while you were there where you believed that the product should be banned or eliminated?

A. One.

Q. What product was that?

A. The so-called Worm Probe.

Q. I have no idea what that is. Can you enlighten me?

A. A Worm Probe is a -- I can describe what it does. It puts electricity into the ground and causes worms to come to the surface so you can gather them for bait.

Q. I have heard of that. I can recall as a kid seeing somebody do that. Why did you think that product should be banned or eliminated?

A. Because the design of it was patently dangerous.

Q. Did the Commission have statistics on the number of injuries or deaths caused by that Worm Probe?

A. They had statistics, but not very many because fortunately for consumers it was not a very wide-spread product.

Q. Had that product killed anyone?

A. Yes.

Q. How many people?

A. I don't recall, maybe three, four.

Q. Had it injured other people?

A. Yes, but electric shock injuries of -- you only see the tip of the iceberg when they're reported because they either result in death usually or just a warning to you not to do that next time.

Q. You don't come to any source where we could

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10:44:03 25 learn of the data, but we had a few cases where the

10:44:07 1 shocks were severe enough where the people report to
10:44:10 2 the emergency room for treatment.
10:44:17 3 Q. Did the CPSC ban that product?
10:44:20 4 A. Yes, they did.
10:44:21 5 Q. Did they ban it nationwide?
10:44:24 6 A. Yes.
10:44:24 7 Q. Did they consider banning it in any particular
10:44:32 8 states?
10:44:32 9 A. They can't ban it in just particular states.
10:44:37 10 They're federal agents.
10:44:44 11 MR. BORMAN: What he really wants to know
10:44:59 12 is if they banned it before or after he used it.
10:45:05 13 BY MR. LOVE:
10:45:05 14 Q. While you were at the CPSC what product did the
10:45:30 15 Commission investigate that was involved in the death
10:45:36 16 of the most people that you recall?
10:45:38 17 A. Probably swimming pools and cribs.
10:45:49 18 Q. Those two products?
10:45:51 19 A. Among other -- there were others that were
10:45:54 20 involved in many deaths. Bicycles.
10:45:58 21 Q. Can you give me a very rough approximation of
10:46:02 22 how many deaths swimming pools or cribs were involved
10:46:04 23 with?
10:46:05 24 A. I think swimming pools might have been involved
10:46:08 25 with around three hundred deaths a year, cribs maybe

10:46:11 1 the same number, maybe five, six hundred. I don't
10:46:14 2 recall the data. It's been quite a while since I've
10:46:17 3 looked at it.
10:46:18 4 Q. Were there any particular types of cribs that
10:46:21 5 the CPSC banned while you were there?
10:46:23 6 A. Well, they banned cribs with certain design
10:46:27 7 features that contributed to the death of the
10:46:32 8 children.
10:46:33 9 Q. Did you agree with that ban?
10:46:36 10 A. Yes.
10:46:38 11 Q. I want to make sure that I know whatever you can
10:46:48 12 recall about any CPSC bans of products that you
10:46:52 13 agreed with. We talked about this Worm Probe --
10:46:55 14 A. I was there twenty-two years.
10:46:57 15 Q. I know, and I'm just asking you to do the best
10:46:59 16 you can to recall any other products. We have got
10:47:02 17 the Worm Probe and cribs with certain design
10:47:05 18 features.
10:47:06 19 Can you recall any other products that the CPSC
10:47:09 20 banned while you were there where you agreed with the
10:47:12 21 ban?
10:47:12 22 A. Not offhand.
10:47:15 23 Q. There may have been, but you can't recall
10:47:17 24 sitting here today?
10:47:19 25 A. There may have been, but I don't recall.

10:47:19 1 Q. I take it there wouldn't have been very many.
10:47:23 2 A. They didn't ban many products.
10:47:25 3 Q. Did you generally agree with the CPSC banned

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10:47:32 4 products or did you generally not agree when they
10:47:35 5 banned products?
10:47:36 6 A. It depended on what led to the Commission
10:47:40 7 banning a product.
10:47:40 8 Q. I understand, but in terms of just a numerical
10:47:45 9 Count of them would you say in most of the cases
10:47:48 10 where they banned a product you agreed with them or
10:47:51 11 disagreed with it?
10:47:52 12 A. I would say most of the them where they banned a
10:47:55 13 product I agreed.
10:48:05 14 Q. In the case of cribs where there were numerous
10:48:11 15 deaths I take it there were possibly numerous
10:48:16 16 injuries?
10:48:16 17 A. Yes.
10:48:17 18 Q. Did the CPSC gather data on those deaths and
10:48:22 19 injuries?
10:48:22 20 A. That's correct.
10:48:24 21 Q. Did it analyze that data?
10:48:26 22 A. The surveillance data alone were insufficient.
10:48:30 23 They analyzed investigation data.
10:48:34 24 Q. Did they analyze the surveillance data at all?
10:48:37 25 A. Yes. It was used to help determine whether or

10:48:39 1 not the Commission was going to consider taking
10:48:45 2 action.
10:48:47 3 Once they considered taking action then they
10:48:49 4 would assign investigations which were a second level
10:48:52 5 of determination so they could get at cause, because
10:48:55 6 you really couldn't get at cause until you
10:48:58 7 investigated individual cases, and you would analyze
10:49:01 8 those investigations and draw conclusions.
10:49:03 9 Q. Were you involved in performing any
10:49:20 10 epidemiological work or analysis of injury data on
10:49:25 11 cribs or swimming pools or any of these other
10:49:28 12 products that the commission banned?
10:49:31 13 A. What do you mean involved?
10:49:36 14 Q. In any way.
10:49:37 15 A. Yes. These involved divisions that reported to
10:49:41 16 me.
10:49:41 17 Q. Would you review any data analysis that was done
10:49:44 18 by those divisions then?
10:49:46 19 A. Yes.
10:49:47 20 Q. Would you perform any analysis of your own?
10:49:51 21 A. Not usually.
10:49:52 22 Q. Did you ever?
10:49:53 23 A. In the case of all terrain vehicles I did.
10:49:57 24 Q. While with the CPSC?
10:50:00 25 A. Yes.

10:50:00 1 Q. What analysis did you perform on ATVs?
10:50:07 2 A. After having asked the Commission for resources
10:50:11 3 to collect exposure data and being denied the
10:50:15 4 resources for budgetary reasons, I was looking for
10:50:20 5 alternative data on exposure, and when this became
10:50:24 6 available to us through public hearings that the
10:50:28 7 Commission had held, I used those to do a preliminary
10:50:32 8 analysis after discussions with the executive
10:50:34 9 director and the chairman of the commission and
10:50:38 10 provided that information to the Commission so that

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10:50:42 they could better understand what the relative
10:50:45 ranking of all terrain vehicles was with respect to
10:50:49 other recreational vehicles.
10:50:53 Q. Were you able to calculate a relative ranking?
10:50:59 A. Yes.
10:51:00 Q. What was it?
10:51:00 A. The specific numbers?
10:51:03 Q. Approximately if you can recall.
10:51:07 A. Approximately one to one to one. I mean the
10:51:12 data were not real clean and so there was an
10:51:16 unsatisfactory known error attached, but basically
10:51:20 the differences that appeared when you looked at
10:51:23 numerated data only washed out when you controlled
10:51:27 for intensity of use.
10:51:28 So the ten to one relationship between all

10:51:31 terrain vehicles and snowmobiles came down to much
10:51:36 closer to one to one when exposed in hours.
10:51:59 Q. Would you agree that cigarettes are a more
10:52:03 dangerous product than the cribs or swimming pools
10:52:06 that the CPSC investigated?
10:52:11 A. I'm not sure what you mean by more dangerous.
10:52:16 Q. That more people are injured or killed as a
10:52:19 result of smoking cigarettes than they are as a
10:52:22 result of using the swimming pools or these cribs.
10:52:27 A. I don't know. I would have to look at the data.
10:52:30 They really add up in a hurry. You're talking about
10:52:35 consumer products that are many, many consumer
10:52:38 products.
10:52:38 Q. I understand. I wasn't asking for the advocate
10:52:44 of all consumer products. I was just asking for
10:52:48 swimming pools and cribs.
10:52:49 A. Probably they produce more fires.
10:52:52 Q. Cigarettes?
10:52:54 A. Yes.
10:52:55 Q. Would you agree that more people die from the
10:52:58 health effects of smoking cigarettes than die from
10:53:02 using these swimming pools or cribs every year?
10:53:06 A. I would agree that more people die from health
10:53:11 conditions that are purportedly caused by cigarettes
10:53:17 than die from swimming pools or cribs each year, yes.

10:53:21 Q. Do you have an opinion as to whether those
10:53:24 health conditions are, in fact, caused by cigarettes?
10:53:27 A. No, I really don't.
10:53:29 Q. Not one way or the other?
10:53:31 A. Well, there is no way to know without
10:53:33 investigating the individual causes.
10:53:35 Q. So in your opinion you can't determine how many
10:53:46 people in the United States die from lung cancer as
10:53:50 the result of smoking cigarettes; there is no way to
10:53:54 estimate that without going to each person who died
10:53:57 and doing a work-up on that person's medical history
10:54:01 and so on?
10:54:03 A. No, I'm not saying that. You can certainly
10:54:10 estimate how many people die from lung cancer and
10:54:15 estimate how many of those may have been associated
10:54:18 with smoking cigarettes, but there is no way you can
10:54:24 definitively say what proportion of the total died

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10:54:27 18 from exposure to cigarettes as opposed to exposure to
10:54:31 19 other potential causes of lung cancer such as radon
10:54:36 20 and other substances that many people are exposed to.
10:54:42 21 Q. In your opinion there is no way to estimate the
10:54:47 22 percentage of people who die from lung cancer and
10:54:53 23 break that down into deaths that result from smoking
10:54:56 24 cigarettes versus deaths that result from any other
10:55:00 25 type of lung cancer cause?

10:55:02 1 A. Not definitively. You can make estimates, but
10:55:06 2 how accurate those estimates are is open to
10:55:09 3 speculation because in the process of generating the
10:55:13 4 estimation, to really be accurate, you've got to get
10:55:16 5 that collateral exposure to other potential causes of
10:55:20 6 the same condition.
10:55:24 7 Q. So you can make an estimate of what percent of
10:55:31 8 the people who die from lung cancer die because they
10:55:35 9 smoke cigarettes, but the estimate has a certain
10:55:40 10 amount of inaccuracies to it; is that what you're
10:55:43 11 saying?
10:55:44 12 A. Well, you still don't know that they died from
10:55:47 13 smoking. You only know that they were a smoker and
10:55:50 14 that they died of a certain condition.
10:55:52 15 To my mind you're still really if you're going
10:55:55 16 to get at specific cause effect you have to look at
10:55:58 17 the individual cases.
10:56:00 18 Q. That was my question I asked I think sometime
10:56:06 19 back then. In your opinion to say anything about the
10:56:10 20 cause of these deaths you would have to look at each
10:56:13 21 individual person, get their medical history and so
10:56:16 22 forth to make any statement about what percent of the
10:56:19 23 people die from lung cancer because they smoked
10:56:23 24 cigarettes?
10:56:24 25 A. To be definitive, yes, I believe that's true.

10:56:26 1 Q. What do you mean by definitive?
10:56:29 2 A. To have an answer that you can really put a lot
10:56:32 3 of faith in.
10:56:33 4 Q. Can you get an answer that you could put any
10:56:39 5 faith in without doing that?
10:56:41 6 A. Well, I'm not sure what any faith means. I can
10:56:48 7 only relate it back to what I had worked with, for
10:56:51 8 example, when we had surveillance data on product
10:56:56 9 related injuries, and we didn't make a determination
10:57:01 10 as to cause until we actually did an investigation of
10:57:04 11 an individual case and determined whether or not that
10:57:07 12 product actually caused the injury or caused the
10:57:11 13 accident which resulted in injury, because there are
10:57:14 14 many other factors that influence cause effect
10:57:19 15 relationships, and the same is true with things that
10:57:22 16 have the latency period of lung cancer or most of the
10:57:27 17 other conditions that are repeatedly attributed to
10:57:30 18 cigarettes.
10:57:31 19 Q. Would you agree that typically anyway it's
10:57:37 20 easier to establish what you consider to be
10:57:39 21 definitive cause in a product injury situation than
10:57:44 22 it is in a disease situation?
10:57:46 23 A. Yes, I'd say it's much easier. That's my point.
10:57:50 24 Q. And in your experience as you told me before is

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10:57:54 25 in the injury situation, not in the disease

10:57:57 1 situation?
10:57:57 2 A. That's correct.
10:57:58 3 Q. Other than your acting as an expert for the
10:58:22 4 tobacco industry in the Minnesota, Mississippi and
10:58:25 5 Texas cases have you done any other work for a
10:58:28 6 tobacco company or tobacco industry organization such
10:58:32 7 as the Tobacco Institute or the Council for Tobacco
10:58:36 8 Research?
10:58:40 9 A. No.
10:58:40 10 Q. Would the decision to ban a product by the CPSC
10:59:50 11 be the type of critical decisions or actions with
10:59:57 12 major personal or other ramifications that you
10:59:59 13 referred to on page 11 of your expert report, Exhibit
11:00:04 14 3301 --
11:00:21 15 A. Would you repeat the question please?
11:00:25 16 Q. Would the decision by the CPSC to ban a product
11:00:29 17 be the type of decision you're talking about in the
11:00:32 18 first sentence on page 11, critical decisions or
11:00:35 19 action with major personal or other ramifications?
11:00:42 20 A. Not necessarily. The decision by the
11:00:48 21 Commission might have major economic ramifications
11:00:51 22 for a particular manufacturer.
11:00:55 23 I'll refer back for a moment to the Worm Probe
11:00:58 24 where when the product was banned the industry
11:01:01 25 disappeared because it was a single product industry

11:01:05 1 and the manufacturer lost his total investment.
11:01:09 2 Q. So would that be an example of the type of
11:01:14 3 critical decision you're referring to on the first
11:01:21 4 sentence of page 11 of your report?
11:01:23 5 A. Yes.
11:01:23 6 Q. Are there other situations where the CPSC bans a
11:01:28 7 product where you don't consider it to be the type of
11:01:31 8 critical decision like in your report on page 11?
11:01:36 9 A. Yeah. I think -- it wasn't really a critical
11:01:39 10 decision, it was forced, but the Commission by the
11:01:43 11 ban on lawn darts did not have particularly major
11:01:47 12 ramifications.
11:01:50 13 What they did was they banned the lawn dart as a
11:01:53 14 toy, but permitted it to be continued as a piece of
11:01:57 15 sports equipment that could no longer be marketed as
11:02:01 16 a toy.
11:02:01 17 So it was a banned toy, but permitted for use of
11:02:05 18 sports equipment and could only be sold in sporting
11:02:08 19 goods stores.
11:02:26 20 Q. You had told me earlier that the Commission by
11:02:29 21 law if banned a product must ban a product nationwide
11:02:36 22 rather than banning it in some small geographic area,
11:02:42 23 correct?
11:02:42 24 A. That's correct.
11:02:42 25 Q. Was there any time where you believed if the

11:02:45 1 Commission had the authority it would have been
11:02:47 2 better to ban a product in a smaller geographical
11:02:51 3 area than the entire United States?

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11:02:53 4 A. No, offhand I can't think of a circumstance in
11:03:00 5 which that would be appropriate.
11:03:11 6 MR. LOVE: Let's take a five minute break.
11:03:36 7 MR. WILSON: Off the record.
11:03:43 8 (Recess taken.)
11:03:43 9 BY MR. LOVE:
11:05:25 10 Q. Dr. Verhalen, I'll show you what has been marked
11:05:28 11 as Exhibit 3051, the defendant's expert report of Dr.
11:05:34 12 Jonathan Samet on epidemiology dated June 2nd, 1997.
11:05:56 13 Is that the expert report that you've reviewed?
11:06:01 14 A. It appears to be.
11:06:03 15 Q. Do you have any expert opinions about this
11:06:23 16 report?
11:06:26 17 A. No, I don't.
11:06:26 18 Q. Do you take issue with any of the opinions set
11:06:34 19 forth in this report?
11:06:36 20 MR. BORMAN: Object to the question as
11:06:40 21 asked and answered.
11:06:41 22 BY MR. LOVE:
11:06:41 23 Q. You can answer.
11:06:43 24 A. Yes. I think earlier on I said that he drew
11:06:47 25 some fairly firm conclusions from the epidemiology

11:06:51 1 data about definitive causation that I might demur.
11:06:59 2 Q. Actually I think you said about his deposition
11:07:02 3 testimony, and now I'm asking about his expert report
11:07:05 4 so it's slightly different, but --
11:07:07 5 A. Same, same reservations.
11:07:10 6 Q. Can you point to any particular opinion or
11:07:21 7 conclusions of Dr. Samet's report that you take issue
11:07:25 8 with?
11:07:25 9 A. Well, do you want me to leaf through and find
11:07:30 10 one?
11:07:31 11 Q. Sure.
11:08:31 12 A. Well, on page 18, for example, under
11:08:36 13 epidemiologic evidence where he's talking about
11:08:41 14 kidney cancer, he's talking about the major cohort
11:08:47 15 studies showing evidence of increased mortality from
11:08:51 16 kidney cancer as do the case-control studies, and
11:08:56 17 that the increase of smokers was modest, and there
11:08:59 18 was little evidence in the change of risk following
11:09:04 19 smoking cessation.
11:09:04 20 Nonetheless, the data has been judged showing a
11:09:09 21 causal association between smoking and cancer of the
11:09:09 22 renal pelvis and body. And he points out that the
11:09:15 23 IARC monograph concludes that smoking causes cancer
11:09:20 24 of the renal pelvis.
11:09:23 25 I think one really has to dig into individual

11:09:27 1 cases and determine conclusively that no other cause
11:09:31 2 for cancer of the renal pelvis may have occurred
11:09:35 3 before one could make such a definitive conclusion.
11:09:39 4 Saying that it's statistically associated -- you
11:09:42 5 can say that it's highly correlated with, you can say
11:09:45 6 that you estimate a certain amount of causation, but
11:09:50 7 to just boldly say that smoking causes cancer of the
11:09:54 8 renal pelvis is a statement that I contend is not
11:09:57 9 fully justified.
11:10:02 10 Q. Are there diseases other than kidney cancer --

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11:10:14 11 A. Oh, surely.
11:10:15 12 Q. -- where you disagree with Dr. Samet's report?
11:10:19 13 A. Surely. If I go through it here any place where
11:10:22 14 he kind of draws those definitive conclusions, I just
11:10:26 15 feel that they're unwarranted.
11:10:29 16 Q. Now, when I asked you if you had any expert
11:10:33 17 opinions about Dr. Samet's report and you told me you
11:10:36 18 did not. Are you distinguishing between your
11:10:39 19 disagreement with these conclusions such as the one
11:10:42 20 he's talking about with kidney cancer and something
11:10:46 21 that you hold to be an expert opinion of yours?
11:10:48 22 A. Not necessarily. Under those circumstances I
11:10:51 23 guess I would be offering an expert opinion, but I
11:10:55 24 didn't expect to be quarried over Dr. Samet's
11:10:59 25 contentions about disease epidemiology because I'm

11:11:03 1 not presenting myself as an expert in disease
11:11:05 2 epidemiology.
11:11:16 3 Q. Do you have an expert opinion today that Dr.
11:11:28 4 Samet is incorrect when he states that smoking causes
11:11:35 5 kidney cancer?
11:11:37 6 A. Do I have an expert opinion today that he is
11:11:44 7 incorrect?
11:11:45 8 Q. Right.
11:11:46 9 A. I have an expert opinion that I think he is
11:11:50 10 overstating his position.
11:12:02 11 Q. You would be willing to testify today at trial
11:12:07 12 that Dr. Samet is overstating the position of smoking
11:12:15 13 and kidney cancer in his expert report; is that
11:12:19 14 correct?
11:12:20 15 A. I would be willing to testify today that in my
11:12:24 16 judgment as an epidemiologist, understanding
11:12:27 17 epidemiologic methods, that a statement of that kind
11:12:31 18 is unwarranted.
11:12:34 19 Q. Is it your expert opinion that the Surgeon
11:12:41 20 General's reports are incorrect when they state that
11:12:45 21 smoking is a cause of lung cancer, COPD and other
11:12:52 22 diseases?
11:12:52 23 A. To --
11:12:54 24 MR. BORMAN: I'll object to the form
11:12:55 25 of the question.

11:12:58 1 THE WITNESS: To the extent that the
11:13:01 2 Surgeon General's report or any other report makes
11:13:04 3 definitive cause effect conclusions about smoking and
11:13:09 4 these diseases in the absence of data beyond the
11:13:13 5 epidemiology which would include to my mind specific
11:13:21 6 laboratory tests and individual case study, that such
11:13:30 7 statements would be unwarranted.
11:13:31 8 BY MR. LOVE:
11:13:31 9 Q. Well, do you know to what extent the Surgeon
11:13:34 10 General makes statements about lung cancer being
11:13:38 11 caused by smoking without considering anything beyond
11:13:40 12 the epidemiological evidence?
11:13:43 13 A. I'm not sure I understand the question.
11:13:46 14 Q. Do you know what the Surgeon General did
11:13:50 15 consider in making the statement that smoking causes
11:13:54 16 lung cancer?
11:13:56 17 A. He considered reviews of the data that were

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11:13:59 available to him when the studies were conducted to
11:14:02 the group that was doing the studies for him.
11:14:04 Q. Did he consider the biology of the disease?
11:14:07 A. Yes. And they were talking about plausibility,
11:14:11 not individual cases histories necessarily.
11:14:13 Q. And under those circumstances is it your expert
11:14:20 opinion that the Surgeon General is incorrect when he
11:14:22 states that smoking causes lung cancer for a certain

11:14:26 percentage of the population?
11:14:28 A. No. It's my expert opinion that he's not
11:14:35 necessarily correct, but that doesn't make him
11:14:39 necessarily incorrect either.
11:14:40 It's a position taken on the basis of the review
11:14:43 of the information and the data.
11:14:46 Q. So it's your opinion that the Surgeon General's
11:14:49 report about lung cancer -- about smoking causing
11:14:53 lung cancer that it may be correct or it may be
11:14:56 incorrect; you don't know which one?
11:15:02 A. That's correct.
11:15:02 Q. And is it your expert opinion that neither the
11:15:20 Surgeon General nor anyone else has what you consider
11:15:25 to be sufficient information to say that smoking
11:15:28 causes lung cancer in some percentage of the
11:15:31 population?
11:15:32 A. I don't know what anybody else has. I mean --
11:15:34 but to the best of my knowledge I have not seen
11:15:38 anything that's -- that present a case to a
11:15:43 sufficient level of detail that I would say that you
11:15:45 could conclusively prove that smoking caused a
11:15:50 particular case of lung cancer.
11:15:52 That is not to say that smoking cannot be a
11:15:55 cause of lung cancer, but it is not the only cause
11:15:59 absent the growing out of other potential causes.

11:16:02 It's very difficult to say how many, if any. You can
11:16:07 presume it on the basis of the weight of evidence,
11:16:11 but that's by itself.
11:16:20 Q. I take it then that you don't except any
11:16:31 statement in any of the Surgeon General's reports
11:16:33 that uses the word cause to link smoking with any
11:16:39 disease?
11:16:40 A. No, that's not true. If they use the word cause
11:16:44 with sufficient caveats about may cause or may be a
11:16:48 cause of, no, that kind of statement I can accept,
11:16:55 but definitive statements that A causes B is one that
11:16:59 is a good deal more difficult to accept without
11:17:02 corollary information.
11:17:09 Q. And the Surgeon General's reports are among the
11:17:12 documents that you have reviewed in performing your
11:17:15 work on the Minnesota case, correct?
11:17:18 A. Yes. I've not looked at it since I took on the
11:17:21 Minnesota case, but I looked at it fairly early on.
11:17:27 Q. Have you looked at the Surgeon General's reports
11:17:33 at all since becoming involved in the Minnesota case?
11:17:38 A. I might have referred back to a page or two or
11:17:42 five or ten from time to time when I was trying to
11:17:45 look up some particular fact.
11:17:47 I can't give you a specific instance, but to

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11:17:50 25 actually sit down and read the Surgeon General's

11:17:53 1 report or review the Surgeon General's report, I have
11:17:57 2 not done that in a single session of reading since
11:18:02 3 becoming a witness in the Minnesota case, that's
11:18:06 4 correct.
11:18:08 5 Q. And in your opinion any descriptions of
11:18:42 6 biologically how smoking would cause a particular
11:18:46 7 disease would not be sufficient in conjunction with
11:18:49 8 epidemiological evidence to state that smoking causes
11:18:54 9 that disease in any particular percentage of the
11:18:59 10 population?
11:18:59 11 A. In certain circumstances it may, but my
11:19:03 12 preferred way of phrasing it would be to say a cause.
11:19:09 13 Q. You would say that smoking is a cause in a
11:19:14 14 certain percentage of the population as opposed to
11:19:18 15 saying smoking is the cause of a certain percentage
11:19:22 16 of the population?
11:19:23 17 A. Smoking maybe a cause.
11:19:28 18 Q. You said that was your preferred way of saying
11:19:34 19 that. Is it your opinion that the Surgeon General
11:19:43 20 did not have sufficient information to say that
11:19:46 21 smoking was the cause of any particular disease -
11:19:50 22 let's just say lung cancer - in any percentage of the
11:19:56 23 population?
11:19:57 24 A. It would be my contention that the Surgeon
11:20:02 25 General's report and any other reports that I may

11:20:05 1 have reviewed during the time that I have been doing
11:20:09 2 this work or at any time previously even all the way
11:20:12 3 back to the time that I was studying for my doctorate
11:20:16 4 in epidemiology I have never seen a case or a study
11:20:20 5 which adequately controlled for other potential
11:20:26 6 causes sufficient to isolate smoking by itself as the
11:20:30 7 cause of a disease.
11:20:35 8 That does not suggest it may not exist, I just
11:20:41 9 don't recall ever having seen one.
11:20:42 10 Q. In the last year or two when you have reviewed
11:20:48 11 the Surgeon General's reports have you gone back to
11:20:50 12 look at the studies on which those reports are based?
11:20:54 13 A. I'm sure I've been back through a few of them.
11:20:57 14 I don't recall precisely, but I have looked at a
11:21:01 15 number of reports over the past couple of years or
11:21:05 16 past fifteen months or so, fourteen, fifteen months
11:21:09 17 since I first got involved and some of those are
11:21:12 18 background reports to the Surgeon General's reports.
11:21:19 19 Nothing adequately controlled for other
11:21:21 20 potential causes to say definitively that smoking by
11:21:24 21 itself is the cause to the best of my knowledge.
11:21:29 22 Q. We're talking about the context of not any
11:21:32 23 individual, but the cause of disease in a certain
11:21:36 24 percentage of the population, correct?
11:21:38 25 A. That's correct.

11:21:41 1 Q. But you haven't reviewed all of the reports
11:21:55 2 citing the Surgeon General's reports, have you?
11:21:57 3 A. No. There may be many, many reports beyond that

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11:22:01 4 are listed in the Surgeon General's reports that I
11:22:06 5 haven't seen, that's correct.
11:22:07 6 Q. What factors would one have to control for to
11:22:11 7 make the kind of statement that would be acceptable
11:22:15 8 to you that smoking is the cause of lung cancer in a
11:22:21 9 certain percentage of the population?
11:22:24 10 A. I would want to see a study that controlled for
11:22:34 11 all known or potential causes of lung cancer to a
11:22:44 12 degree sufficient that you could absolutely rule them
11:22:47 13 out as a corollary cause and say that smoking by
11:22:51 14 itself in the absence of this additional influence
11:22:55 15 could have produced lung cancer.
11:23:00 16 As long as you've got single cases where lung
11:23:02 17 cancer exists where smoking doesn't exist, there is
11:23:05 18 always the possibility that there are other causes.
11:23:08 19 And I think other causes have been shown to be
11:23:10 20 statistically associated with it, but as I said, I'm
11:23:15 21 not presenting myself as a disease epidemiologist
11:23:19 22 here, therefore it's difficult for me to go beyond
11:23:23 23 that at this point.
11:23:24 24 Q. Is it your opinion that since lung cancer is
11:23:27 25 caused in the absence of smoking that it's impossible

11:23:32 1 to show that smoking is the cause of lung cancer in
11:23:40 2 any percent of the population?
11:23:43 3 A. No, it may well be the cause, but you cannot
11:23:49 4 prove it as the cause in any percentage of the
11:23:52 5 population.
11:23:52 6 Q. That was my question and we will break it down
11:23:55 7 into two parts to make sure we're clear.
11:23:58 8 Is it your opinion that because lung cancer does
11:24:02 9 occur in the absence of smoking that smoking cannot
11:24:07 10 be the cause of lung cancer in any percent of the
11:24:12 11 population?
11:24:13 12 A. No, that's not my position.
11:24:15 13 Q. Is it your opinion that because lung cancer does
11:24:19 14 occur in the absence of smoking that it's impossible
11:24:23 15 to prove that smoking is the cause of lung cancer in
11:24:29 16 any percent of the population?
11:24:31 17 A. On the basis of epidemiologic data alone, that's
11:24:36 18 correct.
11:24:37 19 Q. What other data would you need to show that
11:24:42 20 smoking --
11:24:42 21 A. You would want to see definitive case history
11:24:45 22 study where you could show definitively that smoking
11:24:48 23 itself produced the lung cancer in an individual.
11:24:53 24 That kind of data on the same population that you're
11:24:57 25 reviewing with respect to the statistical data or the

11:25:02 1 epidemiologic data would make the story more
11:25:06 2 compelling to me.
11:25:08 3 Q. Compelling enough so that you would agree if
11:25:12 4 that information was shown that smoking was the cause
11:25:16 5 of lung cancer in a certain percentage of the
11:25:22 6 population?
11:25:22 7 A. I would agree that smoking could cause lung
11:25:26 8 cancer.
11:25:26 9 Q. You already agree with that. As we sit here
11:25:29 10 today you agree that smoking may be the cause of lung

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11:25:34 11 cancer, a certain percent of the population?
11:25:37 12 A. That's correct.
11:25:38 13 Q. My question is, you have this further evidence
11:25:41 14 whereas you've described you could prove that smoking
11:25:45 15 was the only cause of lung cancer in certain
11:25:51 16 individuals.
11:25:51 17 Would that then allow you to say that smoking is
11:25:56 18 the cause of lung cancer in some percentage of the
11:26:00 19 population?
11:26:00 20 A. It might.
11:26:01 21 Q. And it might not?
11:26:03 22 A. That's correct.
11:26:03 23 Q. Depending on what?
11:26:10 24 A. Depending on I don't know what at this point. I
11:26:14 25 have not seen the data. I cannot speculate on what I

11:26:18 1 have not seen.
11:26:18 2 Q. How would you go about showing that, smoking as
11:26:25 3 the only cause of lung cancer for an individual?
11:26:28 4 A. I'm not sure. That would take some study.
11:26:32 5 Q. Is that something within the field of your
11:26:35 6 expertise?
11:26:37 7 A. No.
11:26:37 8 Q. What type of expertise would be required to make
11:26:41 9 that conclusion?
11:26:44 10 A. You would need a variety of expertise from
11:26:47 11 clinicians through physiologists, chemists,
11:26:55 12 endocrinologists, geneticists to rule out all these
11:27:03 13 other potential causes.
11:27:03 14 Q. For all of the diseases described in Dr. Samet's
11:27:31 15 report do you agree that smoking is a cause of those
11:27:36 16 diseases?
11:27:37 17 A. I would agree that smoking may be a cause.
11:27:41 18 Q. What's the difference between saying that
11:27:43 19 smoking may be a cause and that smoking is a cause?
11:27:47 20 A. Same thing we have just been talking about, the
11:27:50 21 lack of definitive or relationship between smoking
11:27:55 22 and single cases, individual cases.
11:27:59 23 Epidemiological data by themselves, I do not
11:28:03 24 believe, give you sufficient cause to be able to say
11:28:07 25 that something is the cause of a disease unless --

11:28:14 1 when we're talking about chronic conditions such as
11:28:19 2 this, now there are --
11:28:20 3 Q. Chronic conditions such as what?
11:28:22 4 A. Such as cancer. But when you're talking about
11:28:27 5 diseases in which there is a definitive agent such as
11:28:31 6 an organism, a bacteria that's necessary to produce a
11:28:35 7 disease you can get down to that point where the
11:28:38 8 disease doesn't exist in the absence of the organism
11:28:41 9 and it exists only in the presence of the organism
11:28:44 10 whether it exists a hundred percent or some portion
11:28:49 11 thereof, you could get to the point where you could
11:28:52 12 say that organism is the cause of the effect. But
11:28:55 13 chronic conditions I can't deal with.
11:28:57 14 Q. I was trying to distinguish by saying smoking is
11:29:02 15 the cause of the disease from smoking is a cause of
11:29:06 16 the disease. Perhaps it would help if I
11:29:09 17 differentiated it by saying smoking is the cause of

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11:29:12 the disease and smoking one of the causes of the
11:29:17 disease.
11:29:17 So with that distinction in mind let me ask it
11:29:21 this way: Would you agree that smoking is one of the
11:29:24 causes of lung cancer?
11:29:26 A. I would agree that smoking may be one of the
11:29:29 causes of lung cancer.
11:29:31 Q. And therefore it's your opinion that smoking

11:29:40 also may not be the cause of lung cancer; is that
11:29:45 correct?
11:29:45 A. That's another possibility, yes.
11:29:47 Q. And I take it you would have the same opinion
11:29:49 with the various diseases that Dr. Samet discussions,
11:29:53 oral cancer, laryngo cancer, COPD, esophageal cancer,
11:30:01 cancer of the pancreas, kidney cancer, cancer of the
11:30:07 urinary bladder, cardiovascular diseases, peptic
11:30:23 ulcer disease. Would you have the same opinion about
11:30:27 all of those diseases?
11:30:28 A. I might. I would want to look at his report
11:30:34 again to be sure. But to the extent that there are
11:30:37 no other causes reputed to be associated with the
11:30:44 development of these conditions, I would agree that
11:30:47 my position would be the same.
11:30:50 Q. You're saying only to the extent that there are
11:30:53 no other causes that are reputed to be associated
11:30:57 with those conditions?
11:30:58 A. Absent of the definitive analysis that I was
11:31:01 saying would be necessary on individual cases, yes.
11:31:04 Q. Your opinion would be the same if, in fact,
11:31:07 there were some other causes that are reputed to be
11:31:09 associated with the disease?
11:31:10 A. That's correct.
11:31:11 Q. But if, in fact, there were no other cause

11:31:15 reputed to be associated with the disease that's the
11:31:17 case in which you might be willing to say that
11:31:19 smoking is the cause?
11:31:20 A. That's the case where I might be willing to say
11:31:23 that smoking is the cause.
11:31:27 Q. When you reviewed Dr. Samet's report during your
11:31:37 work on the Minnesota case did you take issue with
11:31:41 anything else in this report other than use of the
11:31:45 phraseology such as the cause?
11:31:48 A. I don't recall offhand because as I've said,
11:31:51 when I was reviewing his report I was reviewing it
11:31:54 basically for background information.
11:31:56 Since I wasn't looking at this from the
11:31:58 standpoint of disease epidemiology, I was looking at
11:32:02 it from the standpoint of the mathematical model
11:32:06 which purports to relate these conditions to cause of
11:32:09 treatment and certain parts of that to tobacco as a
11:32:16 causation then this would have taken on a special
11:32:23 meaning.
11:32:24 But I wasn't looking at it from that standpoint,
11:32:27 just general background information, to see what I
11:32:30 had said about epidemiology and cancer and smoking.
11:32:37 Q. Do you have any expert opinions about Dr.
11:32:42 Samet's report other than the opinion that you

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11:32:48 25 disagreed with his use of phraseology such as calling

11:32:51 1 smoking the cause of any particular disease?
11:32:53 2 A. Not at this point.
11:32:55 3 Q. Do you expect to review Dr. Samet's report in
11:32:59 4 any more detail to reach any more conclusions about
11:33:03 5 it?
11:33:03 6 A. I probably will after this.
11:33:05 7 Q. Why do you think you will do that?
11:33:07 8 A. Because if this is the line of the questioning,
11:33:10 9 and I'm going to asked to characterize Dr. Samet's
11:33:15 10 testimony, I would like to review it again with that
11:33:17 11 in mind.
11:33:21 12 Q. But we have discussed all the opinions you
11:33:24 13 currently have about Dr. Samet's report; is that
11:33:28 14 correct?
11:33:28 15 A. That's correct.
11:36:17 16 MR. LOVE: Would you mark this?
11:36:17 17 (Plaintiffs' Deposition Exhibit No. 3302 - report -
11:36:20 18 marked for identification.)
11:36:20 19 BY MR. LOVE:
11:36:20 20 Q. Doctor, I'm going to show you what we have
11:36:24 21 marked as 3302 and its excerpts from the Surgeon
11:36:29 22 General's report of 1987.
11:36:41 23 It's rather voluminous to give you a complete
11:36:46 24 copy. I've put Post-it's on the pages of the full
11:36:52 25 report to make it easier for you to find the sections

11:36:56 1 that I've copied if you'd like to look for them.
11:37:04 2 If you look at the first page of Exhibit 3302
11:37:14 3 which is page 5 of the Surgeon General's report do
11:37:21 4 you see in the first paragraph that states today more
11:37:25 5 than one of every six American deaths is the result
11:37:29 6 of cigarette smoking?
11:37:31 7 A. Mm-hmm.
11:37:32 8 Q. Do you agree or disagree with that statement?
11:37:39 9 A. Without seeing data, I have no reason to
11:37:44 10 disagree with it.
11:37:45 11 Q. The next sentence says smoking is responsible
11:37:56 12 for an estimated thirty percent of all cancer deaths
11:38:01 13 including eighty-seven percent lung cancer, the
11:38:04 14 leading cause of cancer mortality; twenty-two percent
11:38:07 15 of deaths of coronary heart disease; eighteen percent
11:38:12 16 of stroke deaths; and eighty-two percent of deaths
11:38:16 17 from chronic obstructive pulmonary disease. Do you
11:38:21 18 see that sentence there?
11:38:21 19 A. Yes.
11:38:22 20 Q. Do you agree with those statements?
11:38:25 21 A. No --
11:38:27 22 MR. BORMAN: Hold on. I'll object to
11:38:29 23 the form of that question.
11:38:32 24 THE WITNESS: I would maintain as I
11:38:34 25 said earlier that to my way of thinking this would be

11:38:38 1 more accurately characterized as smoking may be
11:38:41 2 responsible for an estimated thirty percent of all
11:38:44 3 cancer deaths, et cetera.

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11:38:47 4 BY MR. LOVE:
11:38:47 5 Q. You would put the word may be in front of all of
11:38:51 6 those statistics I just read?
11:38:54 7 A. That's correct.
11:38:54 8 Q. Is it your opinion that the Surgeon General did
11:38:58 9 not have enough information to make the statement
11:39:02 10 that he did, that smoking is responsible with those
11:39:06 11 various percentages of the deaths listed there?
11:39:08 12 A. To the best of my knowledge, that's correct.
11:39:10 13 Q. Do you know of any published reports or studies
11:39:27 14 in the last ten years that have taken the position
11:39:33 15 that you have that one cannot make statements that
11:39:38 16 smoking is responsible for any percentage of deaths,
11:39:42 17 but instead one can only make the statement that
11:39:45 18 smoking may be responsible for those percentage of
11:39:50 19 deaths?
11:39:50 20 A. Not that I'm aware of. They may exist, but I'm
11:39:53 21 not aware of any.
11:39:54 22 Q. Have you made any effort to find any such
11:39:58 23 reports or studies that would support your opinion?
11:40:01 24 A. No.
11:40:01 25 Q. Do you have any plans to do that?

11:40:04 1 A. Not necessarily. As I said, I'm not presented
11:40:09 2 as an expert in cancer epidemiology or the
11:40:14 3 epidemiology of smoking related diseases.
11:40:23 4 Q. If you'll turn to the next page of Exhibit 3302
11:40:33 5 it starts with page 10 of the Surgeon General's
11:40:36 6 report and has also page 11, and near the bottom of
11:40:41 7 page 11 do you see the word key new findings?
11:40:46 8 A. Yes, I do.
11:40:47 9 Q. If you could read that paragraph in the first
11:40:52 10 key new finding listed on page 12.
11:40:55 11 A. Okay.
11:40:55 12 Q. My question, Dr. Verhalen, is whether you agree
11:41:44 13 or disagree with that first key new finding that
11:41:48 14 cigarette smoking is a major cause of cerebral
11:41:52 15 vascular disease - parenthesis - stroke - closed
11:41:55 16 parenthesis?
11:41:55 17 A. I would again modify that statement to say that
11:41:59 18 cigarette smoking may be a cause of cerebral vascular
11:42:06 19 disease.
11:42:07 20 Q. For the same reasons we have been discussing
11:42:11 21 earlier?
11:42:12 22 A. That's correct.
11:42:12 23 Q. So in your opinion it's not proper to say that
11:42:18 24 it is the cause of a disease or a major cause of a
11:42:23 25 disease; is that correct?

11:42:24 1 A. It may be a major cause.
11:42:31 2 Q. But in your opinion it's essential to put the
11:42:34 3 word may in that statement; is that correct?
11:42:37 4 A. I think it's essential to caveat all these
11:42:41 5 statements for the reasons I've outlined earlier.
11:42:48 6 Q. Would you turn to the next page of Exhibit 3302?
11:42:54 7 That includes page 37 from the Surgeon General's
11:42:57 8 report.
11:43:04 9 You'll see in the middle there five factors that
11:43:07 10 the Surgeon General used in determining causality.

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11:43:10 11 My question is, are you familiar with those five
11:43:13 12 factors?
11:43:15 13 A. Yes, I am.
11:43:16 14 Q. In your opinion can those five factors be used
11:43:20 15 to determine causality?
11:43:21 16 A. They can be used to support the negotiation of
11:43:25 17 causality, yes, but they're not definitive.
11:43:29 18 Q. In your opinion satisfying each of those five
11:43:34 19 factors is not sufficient to make the statement that
11:43:36 20 smoking causes a disease; is that correct?
11:43:38 21 A. Not by themselves.
11:43:40 22 Q. Those factors by themselves are not sufficient?
11:43:44 23 A. That's correct.
11:43:44 24 Q. And in addition, I take it in your opinion you
11:43:50 25 would need at least clear evidence that smoking was

11:44:00 1 the only cause of the disease in some people; is that
11:44:03 2 correct?
11:44:04 3 A. For even a single person would be adequate
11:44:07 4 probably.
11:44:07 5 Q. Let's just take lung cancer for an example.
11:44:15 6 You're generally familiar with the epidemiological
11:44:17 7 evidence on smoking and lung cancer?
11:44:20 8 A. Very general.
11:44:23 9 Q. And would you agree that at the very least that
11:44:27 10 shows a very strong association between smoking and
11:44:30 11 lung cancer?
11:44:31 12 A. No question.
11:44:32 13 Q. If in addition to that we had evidence of one
11:44:35 14 case where smoking was the only cause of the person's
11:44:40 15 lung cancer would you then be able to say that
11:44:43 16 smoking is a cause of lung cancer?
11:44:49 17 A. Yes.
11:44:51 18 Q. And would we then -- would it then be possible
11:44:56 19 to go in by some further study, determine information
11:45:00 20 that would allow you to say that smoking is the cause
11:45:03 21 of lung cancer in a certain percentage of the
11:45:06 22 population?
11:45:06 23 A. That would be a good deal more difficult because
11:45:10 24 as long as you can still show that lung cancer is
11:45:13 25 caused in the total absence of smoking or any

11:45:17 1 exposure to smoke, but is seen in association with
11:45:26 2 other refuted causes such as radon, that you cannot
11:45:31 3 say cancer is the cause -- I mean that smoking is the
11:45:36 4 cause of lung cancer.
11:45:37 5 Q. Even in a percentage of the population?
11:45:40 6 A. You may be able to go that far down.
11:45:45 7 Q. How would you do that; what would you need to
11:45:49 8 establish?
11:45:49 9 A. You would need to show that there are specific
11:45:52 10 cases where the only cause was smoking.
11:45:55 11 Q. And if you could establish that one half, in one
11:46:03 12 half of one percent that smoking was the only cause,
11:46:06 13 I take you would be willing to go so far as to say
11:46:09 14 that smoking is the cause of lung cancer in at least
11:46:12 15 one half of the percent of the population?
11:46:16 16 A. No. You would say that smoking may be the cause
11:46:19 17 of lung cancer in a certain portion of the

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11:46:22 18 population, but you can't simply go out then and take
11:46:26 19 lung cancer in that population and subscribe a
11:46:30 20 certain portion of it to that particular -- that
11:46:35 21 particular type of exposure by itself. You need to
11:46:39 22 continue to collect data. It's almost a never ending
11:46:44 23 cycle.
11:46:45 24 Q. Is it almost never ending or is it really in
11:46:50 25 practical experience never ending?

11:46:52 1 A. From the standpoint of real life conditions it
11:46:55 2 probably becomes never ending if you really believe
11:46:59 3 something is the case; you must study it until you
11:47:05 4 consistently rule out all of the possibilities.
11:47:08 5 Q. And the cases of kind of chronic diseases we're
11:47:13 6 talking about such as cancer, as a practical matter
11:47:16 7 this is never ending, right?
11:47:19 8 A. Well, it may be. I don't know.
11:47:21 9 Q. At least as far as you're concerned it hasn't
11:47:27 10 ended yet; we haven't reached the point where we can
11:47:31 11 say smoking is the cause of any type of cancer; is
11:47:35 12 that right? We haven't reached the point where you
11:47:38 13 can say smoking is the cause of any kind of cancer?
11:47:43 14 A. We haven't reached a point where we can say
11:47:46 15 smoking is the cause of any kind of cancer.
11:47:49 16 Q. I thought you told me before that you couldn't
11:47:53 17 even say that smoking is a cause of a cancer; we have
11:47:57 18 to say smoking may be a cause of a cancer?
11:48:00 19 A. That's correct.
11:48:01 20 Q. You still hold that belief?
11:48:03 21 A. Yes, I do.
11:48:04 22 Q. After the five criteria listed there on page 37
11:48:20 23 of the Surgeon General's 1989 report the next few
11:48:27 24 sentences describe what the word causality means;
11:48:31 25 what its use today means in the Surgeon General's

11:48:33 1 1964 report. Do you see that?
11:48:36 2 A. Mm-hmm.
11:48:37 3 Q. And they state there in that report cause
11:48:47 4 meant -- what it actually says is cause was used to
11:48:51 5 convey - quote - the notion of a significant,
11:48:54 6 effectual relationship between an agent and an
11:48:57 7 associated disorder or disease in the host; is that
11:49:03 8 correct?
11:49:03 9 A. That's what it says, correct.
11:49:06 10 Q. In your opinion has smoking been shown to be
11:49:12 11 a -- withdraw that question and start again.
11:49:17 12 In your opinion has a significant effectual
11:49:22 13 relationship between smoking and lung cancer been
11:49:27 14 established?
11:49:33 15 A. I'm not sure whether it has or not. The
11:49:38 16 negotiation of a significant effectual relationship
11:49:41 17 is one which is subject to some interpretation.
11:49:45 18 Q. What's your interpretation?
11:49:47 19 A. A significant effectual relationship may be that
11:49:53 20 the relationship exists, but it's not necessarily the
11:49:56 21 cause of it.
11:49:59 22 You can have an effective relationship between
11:50:01 23 something, but it doesn't necessarily mean that A
11:50:03 24 causes B which causes C.

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11:50:06 25 Q. And you contend that the word cause in the sense

11:50:16 1 that we have been discussing it today cannot then be
11:50:22 2 defined as merely a significant effectual
11:50:26 3 relationship?
11:50:26 4 A. That's not the way I would define it.
11:50:28 5 Q. Now, you told me earlier that if you wanted to
11:50:52 6 determine that smoking actually was the cause of a
11:50:56 7 disease you would need to control for every other
11:50:59 8 possible cause in some study and then prove that
11:51:01 9 smoking as the only cause; is that correct?
11:51:04 10 A. For a particular disease, yes.
11:51:11 11 Q. If you look at the next page of Exhibit 3302
11:51:23 12 which shows pages 128 and 129 of the Surgeon
11:51:27 13 General's 1989 report, and I'll direct your attention
11:51:31 14 to the bottom of page 128 to the top of page 129, the
11:51:36 15 paragraph that appears there.
11:51:41 16 A. Starting at the estimated relative risks?
11:51:45 17 Q. Yes.
11:51:46 18 A. I'll look at it in larger context.
11:51:49 19 Q. Sure.
11:52:43 20 A. All right.
11:52:45 21 Q. Now, in that paragraph they were talking about a
11:52:51 22 situation in which some other confounding variables
11:52:56 23 were not controlled for; is that correct?
11:52:58 24 A. Mm-hmm.
11:52:59 25 Q. And then the report goes on to say I think

11:53:03 1 something that you've been saying, that failure to
11:53:05 2 control for such variables could bias upwards or
11:53:10 3 downwards this estimated use due to cigarette usage?
11:53:16 4 A. That's correct.
11:53:16 5 Q. Is that something that you would agree with?
11:53:18 6 A. Yes.
11:53:19 7 Q. And the next sentence says as discussed in
11:53:21 8 chapter 2 numerous attempts to control statistically
11:53:25 9 for confounding and stratifying materials have not
11:53:29 10 altered the estimated risks for cigarette related
11:53:34 11 diseases.
11:53:35 12 My first question is, do you know if that
11:53:37 13 statement is true?
11:53:38 14 A. I don't know that it's true.
11:53:42 15 MR. BORMAN: I am going to object to
11:53:43 16 asking him a question about that sentence. Would you
11:53:47 17 tell him having a chance to look at the discussion of
11:53:49 18 chapter two?
11:53:52 19 BY MR. LOVE:
11:53:52 20 Q. As I said, the entire report is there so if you
11:53:56 21 need to review something, please do it. I don't know
11:54:00 22 what you need to review.
11:54:02 23 I think you can answer this one, but you tell
11:54:05 24 me; do you know if that statement, the first full
11:54:12 25 sentence on the top of page 129 is true?

11:54:15 1 A. I don't know whether it's true or not.
11:54:19 2 Q. If you just assume that it's true for the sake
11:54:27 3 of my next question what significance would that have

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11:54:35 4 to you in determining whether one can say that
11:54:40 5 smoking causes one of these diseases?
11:54:44 6 A. Not a great deal because the statement that
11:54:47 7 numerous attempts to control statistically for
11:54:50 8 confounding and stratifying variables doesn't suggest
11:54:54 9 that they were successful in controlling it.
11:54:57 10 If they were able to say definitively that they
11:54:59 11 were successful in controlling for those, and it had
11:55:02 12 not materially altered the estimated relative risks
11:55:06 13 then it might be a statement with which I could
11:55:09 14 agree, but here we're talking about relative risk,
11:55:13 15 not attributable risk and not necessarily cause.
11:55:16 16 Relative risk is simply the number of cases
11:55:19 17 among those exposed to a condition in relation to
11:55:22 18 those without the case -- with a disease who had not
11:55:28 19 been exposed to it.
11:55:29 20 Q. That's my question. If, in fact, these attempts
11:55:34 21 to control statistically for confounding and
11:55:39 22 stratifying variables were successful and the results
11:55:44 23 were that there was no material alteration in the
11:55:48 24 estimated relative risks for these cigarette related
11:55:51 25 diseases would that affect your opinions as to

11:55:55 1 whether one can say that smoking is a cause of those
11:55:58 2 diseases?
11:56:00 3 A. It might if they were able to adequately control
11:56:09 4 for those, but again, they were talking about
11:56:14 5 materially altering the estimated relative risks, not
11:56:19 6 materially altering the position of whether or not
11:56:23 7 smoking was a cause or the cause.
11:56:25 8 Q. I understand. I'm trying to figure out whether
11:56:29 9 or not the effect there on relative risks influences
11:56:35 10 your opinion about whether smoking can be said to be
11:56:37 11 a cause of the diseases.
11:56:39 12 A. Might be said to be a cause.
11:56:41 13 Q. So you would have the same --
11:56:43 14 A. Yes.
11:56:45 15 Q. -- opinion really?
11:56:46 16 A. That's correct.
11:56:46 17 Q. Regardless of what the results of the
11:56:46 18 controlling variable might say?
11:56:54 19 A. You're talking about a hypothetical here that's
11:56:57 20 difficult to envision. Even if I go back here and
11:57:00 21 read this now, since I said earlier that I have not
11:57:07 22 seen anything and I have been through this report,
11:57:09 23 that I don't recall having seen anything that
11:57:11 24 adequately controlled for these confounded variables,
11:57:17 25 that being the case, I don't see that the position

11:57:21 1 can be taken that smoking is the cause or a cause for
11:57:27 2 any of these necessarily. It may be a cause for any
11:57:31 3 of these conditions.
11:57:42 4 Q. Would you turn to the last page of Exhibit 3302
11:57:46 5 that includes pages 206 and 207 of the Surgeon
11:57:50 6 General's 1989 report, and I'll direct you next to
11:57:58 7 the bottom of 206 and top of the page 207;
11:58:03 8 attributable risks and smoking attributable
11:58:09 9 mortality.
11:58:10 10 If you need to review the Surgeon General's

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11:58:13 11 report that's right there in front of you, please do.
11:59:28 12 A. Yes.
11:59:29 13 Q. Dr. Verhalen, in the first paragraph of that
11:59:32 14 section would you agree that the Surgeon General uses
11:59:35 15 the concept of attributable risk to make the
11:59:38 16 statement that smoking accounts for about eighty to
11:59:42 17 ninety percent of lung cancer deaths and eighty to
11:59:46 18 eighty-five percent of deaths from COPD?
11:59:50 19 A. Would I agree that he made that statement?
11:59:51 20 Q. Yes.
11:59:52 21 A. Yes.
11:59:52 22 Q. And he's using the concept that that attributed
12:00:01 23 to that?
12:00:02 24 A. He's using that concept.
12:00:05 25 Q. Attributable risk figures can be used to

12:00:09 1 calculate smoking attributable mortality on the next
12:00:15 2 page. Do you agree with that statement?
12:00:18 3 A. Not really. The statement is too simple and it
12:00:26 4 oversimplifies the notion of smoking attributable
12:00:30 5 mortality.
12:00:34 6 Q. How can you calculate smoking attributable
12:00:39 7 mortality?
12:00:40 8 A. It's very difficult because first off you have
12:00:43 9 to know what the absolute contribution of smoking is
12:00:49 10 and have proof that that is a contribution of
12:00:53 11 smoking.
12:00:54 12 Then you have to be able to take a population
12:00:57 13 and separate it out, those who have smoked from those
12:01:01 14 who have not smoked, and exclude all of the factors,
12:01:05 15 a whole notion of attributable risk is predicated on
12:01:10 16 all else being equal.
12:01:12 17 As I said earlier, to the best of my knowledge
12:01:17 18 and in my review I have not seen any studies that
12:01:20 19 have adequately controlled for this and made all else
12:01:24 20 equal so that you were looking only at smoking. So
12:01:28 21 I would have difficulty with the statement only
12:01:34 22 that attributable risk factors can be used to
12:01:37 23 calculate smoking attributable mortality.
12:01:43 24 It could be used to estimate smoking
12:01:46 25 attributable mortality, but that's only an estimate

12:01:50 1 and you don't know an awful lot about a degree of
12:01:54 2 precision in that estimate.
12:02:01 3 Q. Do you agree or disagree with the next statement
12:02:06 4 there at the top of page 207 that approximately three
12:02:13 5 hundred fifty thousand deaths each year are
12:02:16 6 attributable to cigarette smoking?
12:02:18 7 A. Well, I'll agree that that's what the report
12:02:21 8 says. I think that the statement is unwarranted,
12:02:27 9 that it can be positively attributed to three hundred
12:02:32 10 fifty thousand deaths.
12:02:34 11 Q. Can it be estimated to be three hundred fifty
12:02:37 12 thousand deaths?
12:02:37 13 A. You may estimate that based upon the conventions
12:02:42 14 that they used when they did this, but as I pointed
12:02:46 15 out, I have difficulty with those estimates.
12:02:50 16 Q. Are those the types of estimates for morbidity
12:02:58 17 rather than mortality that Dr. Zeger, Wyant and

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12:03:03 18 Miller performed in their analysis?
12:03:06 19 A. It doesn't make much difference whether you're
12:03:09 20 talking about morbidity or mortality. In either case
12:03:13 21 you're talking about trying to pinpoint the specific
12:03:16 22 cause of a condition.
12:03:16 23 Q. Right. And my question is, whether one can make
12:03:23 24 the estimates that Drs. Zeger, Miller and Wyant make
12:03:28 25 from smoking attributable to morbidity rather than

12:03:33 1 mortality.
12:03:36 2 A. I don't -- I don't think that's going to be any
12:03:39 3 easier than everything we have talked about up to
12:03:45 4 this point.
12:03:45 5 Q. Is it going to be any more difficult than
12:03:48 6 estimating smoking attributable mortality as the
12:03:51 7 Surgeon General has done?
12:03:52 8 A. I'm not sure I follow your question now.
12:03:55 9 Q. Is the process for making these estimates of
12:03:59 10 smoking attributable to morbidity any different than
12:04:02 11 making these estimates that the Surgeon General has
12:04:06 12 made for smoking to smoking in mortality?
12:04:13 13 A. There may be additional calculations that you
12:04:16 14 would want to put in to determine the degree of
12:04:22 15 specificity between the smoking and the condition
12:04:27 16 that you're talking about where you're talking about
12:04:31 17 dose response relationships or whether you're talking
12:04:34 18 about changes as a result of smoking sensation and so
12:04:38 19 on that you may then be able to derive some
12:04:42 20 estimates.
12:04:42 21 But they are after all only still estimates and
12:04:46 22 may be difficult to put fair margins around.
12:04:49 23 You still haven't proved definitively that
12:04:52 24 smoking is the cause or a cause of a condition;
12:04:57 25 whether it led to the death of the individual or

12:04:59 1 simply the illness.
12:05:02 2 Q. My question is whether or not in general the
12:05:03 3 same process can be used to calculate smoking
12:05:05 4 attributable to mortality and smoking attributable to
12:05:10 5 morbidity.
12:05:11 6 A. If you accept the process for one you can accept
12:05:18 7 it for the other.
12:05:23 8 MR. LOVE: Why don't we break for lunch.
12:05:31 9 (Recess taken.)
12:05:31 10 BY MR. LOVE:
12:05:31 11 Q. Dr. Verhalen, this morning we discussed the
12:05:31 12 report of the Surgeon General, particularly the 1989
12:05:31 13 report, and Dr. Samet's report and the fact that both
12:05:31 14 of them conclude that smoking causes certain diseases
12:05:31 15 and also attribute at least in the Surgeon General's
12:05:31 16 case a certain percentage of mortality to smoking,
12:05:31 17 correct?
12:05:31 18 A. Yes.
12:05:31 19 Q. And you've disagreed with making those types of
12:05:31 20 statements about cause?
12:05:31 21 A. That's correct.
12:05:31 22 Q. Without going through lots of other reports
12:05:31 23 written by other people that have been published
12:05:31 24 you're aware, aren't you, that even in the

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12:05:31 25 bibliography that you've provided that there are

12:05:31 1 numerous articles written by various people who also
12:05:31 2 make statements that smoking is a cause of particular
12:05:31 3 diseases or several diseases and others that actually
12:05:31 4 put percentage of deaths resulting from a disease
12:05:31 5 that was caused by smoke?
12:05:31 6 A. That's correct.
12:05:31 7 Q. And I take it you disagree with all those
12:05:31 8 characterizations?
12:05:31 9 A. I disagree with characterizations of that nature
12:05:31 10 in chronic condition statements.
12:05:31 11 Q. And all of the diseases that Dr. Samet and
12:05:31 12 doctors Zeger, Wyant and Miller have called major
12:05:31 13 smoking attributable diseases fall into the category
12:05:31 14 of what you would call major --
12:05:31 15 A. That's correct.
12:05:31 16 MR. LOVE: Let's have this
12:05:31 17 marked.
12:05:31 18 (Plaintiffs' Deposition Exhibit 3303 - article -
12:05:31 19 marked for identification.)
12:05:31 20 BY MR. LOVE:
12:05:31 21 Q. Dr. Verhalen, I'll show you what we have marked
12:05:31 22 as Exhibit 3303, an article written by Roe and Pike.
12:05:31 23 I'll ask, have you ever seen that before?
12:05:31 24 MR. BORMAN: Mr. Love, was this a
12:05:31 25 pre-designated document?

12:05:31 1 MR. LOVE: It's one of the documents
12:05:31 2 cited in Dr. Samet's report.
12:05:31 3 THE WITNESS: I don't recall seeing
12:05:31 4 the article offhand, but --
12:05:31 5 BY MR. LOVE:
12:05:31 6 Q. Have you ever heard of Mr. Roe or Mr. Pike?
12:05:31 7 A. No.
12:05:31 8 Q. Let me direct your attention to the first
12:05:31 9 sentence on the first page of the report. It states
12:05:31 10 the evidence implicating smoking as being causally
12:05:31 11 related to cancer of the lung is very strong. Do you
12:05:31 12 agree with that statement?
12:05:31 13 A. I'm not in a position to agree with it. It
12:05:31 14 depends on the spin one puts on it when one reads it.
12:05:31 15 The evidence implicating smoking as causally related
12:05:31 16 is very strong and still doesn't say that it is
12:05:31 17 definitive and final.
12:05:31 18 So to that extent I could agree with it, but
12:05:31 19 it's one I'm not in a position right now to disagree
12:05:31 20 with.
12:05:31 21 MR. BORMAN: May I ask a question here
12:05:31 22 about this document? My copy isn't very good. It
12:05:31 23 looks almost as if that statement has ended with a
12:05:31 24 quotation, but I can't tell.
12:05:31 25 MR. LOVE: I believe it's a star; it's

12:05:31 1 an asterisk.
12:05:31 2 MR. BORMAN: Thank you.
12:05:31 3 BY MR. LOVE:

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12:05:31 4 Q. So if I understand where we are on this
12:05:31 5 particular statement today, you won't say that you
12:05:31 6 disagree with it; is that correct?
12:05:31 7 A. That's correct. Evidence is evidence. It
12:05:31 8 doesn't mean that it's proof yet.
12:05:31 9 Q. In the next paragraph the authors discuss what
12:05:31 10 they call an opposing point of view that's based on
12:05:31 11 the concept that people who get lung cancer may also
12:05:31 12 be people who are just prone to smoking with no
12:05:31 13 causal effect between the two; is that right?
12:05:31 14 A. That's what the statement says.
12:05:31 15 Q. Now, is your opposition to saying that smoking
12:05:31 16 causes lung cancer on the grounds that's stated here
12:05:31 17 in this second paragraph of Exhibit 3303 on the first
12:05:31 18 page?
12:05:31 19 A. No, not necessarily. I'm not saying that I know
12:05:31 20 what all of the alternative potential causes are, but
12:05:31 21 gene pool theory which is what this would be driving
12:05:31 22 at is certainly one notion that many epidemiologists
12:05:31 23 seem to subscribe to.
12:05:31 24 Q. Is it one that you subscribe to?
12:05:31 25 A. I subscribe to it as a possible cause of many

12:05:31 1 conditions.
12:05:31 2 Q. Would you say that that's your principal
12:05:31 3 objection to saying that smoking causes lung cancer?
12:05:31 4 A. No.
12:05:31 5 Q. At the bottom of the bottom paragraph on that
12:05:31 6 first page of Exhibit 3303 the author has
12:05:31 7 distinguished between saying that smoking is the
12:05:31 8 cause or the only cause of lung cancer versus saying
12:05:31 9 in the absence of smoking the lung cancer death rate
12:05:31 10 in the community would be a small fraction at its
12:05:31 11 present level. Is that a fair interpretation?
12:05:31 12 A. I don't know. Let me read it. Is that a fair
12:05:31 13 interpretation; was that your question?
12:05:31 14 Q. Right.
12:05:31 15 A. Again, I would caveat the last part of that
12:05:31 16 statement with the lung cancer death rate in the
12:05:31 17 community may be only a small fraction.
12:05:31 18 Q. That was going to be my next question. Would
12:05:31 19 you agree with the end of that sentence - and I take
12:05:31 20 it your answer is no, you would have to add the words
12:05:31 21 may be to qualify it - in that respect; is that
12:05:31 22 correct?
12:05:31 23 A. Preliminarily, yes. I'm not sure what comes
12:05:31 24 next.
12:05:31 25 Q. Well, just -- that's -- leaving the article

12:05:31 1 aside for one second, based on all of the review that
12:05:31 2 you've done of the literatures, studies, reading
12:05:31 3 Surgeon General's reports and everything else is it
12:05:31 4 your opinion that the lung cancer death rate in the
12:05:31 5 United States would be a small fraction of its
12:05:31 6 present level if in the absence of smoking?
12:05:31 7 A. That it may be somewhat lower, yes. I have no
12:05:31 8 idea. It may be zero. It may be one hundred -- it
12:05:31 9 may be not one iota different.
12:05:31 10 Q. So your opinion the lung cancer death rate may

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12:05:31 11 be a small fraction of its present level or one
12:05:31 12 hundred fraction of its present level?
12:05:31 13 A. Yes.
12:05:31 14 Q. That's really all you would say that would
12:05:31 15 happen?
12:05:31 16 A. That's right.
12:05:31 17 Q. Would you look at the top of the second page of
12:05:31 18 Exhibit 3303? You'll see that the author has
12:05:31 19 referred to I believe four items of epidemiological
12:05:31 20 evidence in which they base their statements on.
12:05:31 21 A. You're talking about the first paragraph?
12:05:31 22 Q. Yes, under the heading epidemiological studies.
12:05:31 23 A. May I take a moment to read it?
12:05:31 24 Q. Sure. I should correct myself. It's five
12:05:31 25 epidemiological studies.

12:05:31 1 A. And your question was --
12:05:31 2 Q. My first question was, were you aware of those
12:05:31 3 five studies?
12:05:31 4 A. Not specifically, but I seem to have heard of
12:05:31 5 the one about the lung cancer rate in British
12:05:31 6 doctors.
12:05:31 7 Q. Any others that are familiar to you?
12:05:31 8 A. No. I can't say I've not heard of them, but
12:05:31 9 offhand they don't ring a bell.
12:05:31 10 Q. If you assume that the author's statements about
12:05:31 11 those studies are correct in that first paragraph on
12:05:31 12 the second page of Exhibit 3303 would that have any
12:05:31 13 effect on your opinion as to whether --
12:05:31 14 A. Well, no because I have to assume they're
12:05:31 15 correct.
12:05:31 16 Q. I'm asking you to assume for the purposes of my
12:05:31 17 questions that these statements about the studies are
12:05:31 18 correct. So just assume that they are.
12:05:31 19 My question is, if they're correct does that
12:05:31 20 have any effect on your opinion as to whether smoking
12:05:31 21 causes lung cancer or whether anyone can estimate the
12:05:31 22 percentage of a population that dies from lung cancer
12:05:31 23 because of smoking?
12:05:31 24 A. Not really.
12:05:31 25 Q. If you look at the bottom paragraph on that

12:05:31 1 second page of Exhibit 3303, the first sentence says
12:05:31 2 while it is still possible to find fault with certain
12:05:31 3 aspects of any individual survey, if we stop right
12:05:31 4 there do you agree with that much of the sentence?
12:05:31 5 A. Yes.
12:05:31 6 Q. Then the sentence goes on to say the
12:05:31 7 extraordinary consistency of the results as a whole
12:05:31 8 provides convincing evidence of the association
12:05:31 9 between smoking and lung cancer.
12:05:31 10 I'd like to ask the -- the question I'd like to
12:05:31 11 ask you is, in your review of the literature and so
12:05:31 12 on have you found an extraordinary consistency of
12:05:31 13 results about the relationship between smoking and
12:05:31 14 lung cancer?
12:05:31 15 MR. BORMAN: I'll object to the form
12:05:31 16 of the question.
12:05:31 17 THE WITNESS: I'm not sure what the

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12:05:31 18 term extraordinary consistency means. There is a
12:05:31 19 consistency.
12:05:31 20 BY MR. LOVE:
12:05:31 21 Q. How would you characterize the consistency?
12:05:31 22 A. As I just did, there is a consistency.
12:05:31 23 Q. Is the consistency greater than what you'd find
12:05:31 24 between other causes, potential causes, of lung
12:05:31 25 cancer and the incidence of lung cancer?

12:05:31 1 A. No, I would say it's probably about the same.
12:05:31 2 Most of the studies that I seem to recall reading
12:05:31 3 over the past many years and during which radon was
12:05:31 4 under fire. There was consistency there too.
12:05:31 5 Q. The same degree of consistency as was smoking?
12:05:31 6 A. Yes, and lung cancer from asbestos workers and
12:05:31 7 so forth.
12:05:31 8 Q. Does the level of consistency that you found
12:05:31 9 between smoking and lung cancer lead you to believe
12:05:31 10 that there is convincing evidence for the association
12:05:31 11 between smoking and lung cancer?
12:05:31 12 MR. BORMAN: Object to the form of the
12:05:31 13 question.
12:05:31 14 THE WITNESS: The -- again, it could
12:05:31 15 be convincing about an association, but it is not
12:05:31 16 definitive evidence of cause and effect.
12:05:31 17 BY MR. LOVE:
12:05:31 18 Q. Is the evidence convincing to you of the
12:05:31 19 association between smoking and lung cancer?
12:05:31 20 A. Of the association?
12:05:31 21 Q. Yes.
12:05:31 22 A. Yes.
12:05:31 23 Q. If you look at the first paragraph on the third
12:05:31 24 page of Exhibit 3303 --
12:05:31 25 A. Otherwise known as page 4?

12:05:31 1 Q. Faxed page 4 at the top, yes. You'll see that
12:05:31 2 the first paragraph refers to seven prospective
12:05:31 3 studies about smoking and lung cancer.
12:05:31 4 In your opinion is it possible to calculate a
12:05:31 5 death rate from lung cancer in relation to smoking
12:05:31 6 habits based on --
12:05:31 7 A. No.
12:05:31 8 Q. -- all of the studies that you've seen on that
12:05:31 9 issue?
12:05:31 10 A. No.
12:05:31 11 Q. Why not?
12:05:31 12 A. It depends on the distinction of the word in
12:05:31 13 relation to the death rate among people from lung
12:05:31 14 cancer and how that associates to whether or not
12:05:31 15 those people smoke can be calculated, but the
12:05:31 16 association is, again, not necessarily causal. There
12:05:31 17 are many other factors other than smoking.
12:05:31 18 MR. LOVE: Let's mark this.
12:05:31 19 (Plaintiffs' Deposition Exhibit 3304 - article -
12:05:31 20 marked for identification.)
12:05:31 21 BY MR. LOVE:
12:05:31 22 Q. Dr. Verhalen, I'll show you what we have marked
12:05:31 23 as Exhibit 3304 to your deposition, a document
12:05:31 24 entitled Cigarette Smoking and Causal Relationships.

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12:05:31 25 According to the initials at the end of the

12:05:31 1 document SJG is the author and I'll represent to you
12:05:31 2 that that is Dr. Greene, S.J. Greene, who was a
12:05:31 3 research chemist with BAT. Have you ever seen that
12:05:31 4 before?
12:05:31 5 A. I don't recall ever having seen it, no.
12:05:31 6 Q. Dr. Verhalen, the questions I have of this
12:05:31 7 document directed to the first two paragraphs on the
12:05:31 8 third page of the document, if you would please read
12:05:31 9 those to yourself.
12:05:31 10 A. Okay.
12:05:31 11 Q. Do you see the reference in the first paragraph
12:05:31 12 to what the author refers to as special causality?
12:05:31 13 A. Mm-hmm.
12:05:31 14 Q. Would you agree that that's the type of
12:05:31 15 causality that you would like to see before making a
12:05:31 16 statement that smoking causes lung cancer for
12:05:31 17 instance?
12:05:31 18 A. Well, I'll have to take I guess a look at what
12:05:31 19 preceded this paragraph.
12:05:31 20 Q. Please do, and you might find on page 2
12:05:31 21 beginning with the second full paragraph some
12:05:31 22 assistance in that regard.
01:45:16 23 A. I'm not sure what you mean by full causality.
01:45:20 24 Q. Is the causality -- is the test for causality
01:45:25 25 that you've been espousing to in your expert report

01:45:32 1 the type of proof that's referred to there, to prove
01:45:38 2 that A causes B you would have to demonstrate A
01:45:44 3 precedes B, that event A is sufficient that event B
01:45:53 4 will follow?
01:45:54 5 A. Pretty close to it. Not necessarily to ensure,
01:46:01 6 but that B --
01:46:04 7 Q. So A causes B, but might not always cause B?
01:46:08 8 A. That's correct.
01:46:09 9 Q. That's your definition of causality?
01:46:14 10 A. Yes.
01:46:16 11 Q. Do you agree that the complex systems such as
01:46:29 12 chronic diseases like lung cancer, that that type of
01:46:37 13 causality can be too restrictive?
01:46:44 14 A. Too restrictive?
01:46:46 15 Q. That that notion of causality doesn't have much
01:46:50 16 application to it because it's so difficult, if not
01:46:54 17 impossible, to establish your type of A causality?
01:47:01 18 A. That depends on what you're trying to do with it
01:47:04 19 when you decide what level of association you're
01:47:08 20 trying to -- what level of strength you're trying to
01:47:11 21 get in this association.
01:47:15 22 If you're just looking for something that will
01:47:18 23 give you insight to relationships or conditions and
01:47:21 24 causes, that's one thing. If you're on the other
01:47:25 25 hand going to make presumably Draconian judgements

01:47:33 1 based upon this, then I think it's important to pin
01:47:37 2 it down as much as possible, however difficult that
01:47:41 3 might be.

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01:47:44 4 It's not to suggest that only one thing can
01:47:47 5 cause it, but simply to recognize that more than one
01:47:54 6 can cause it.
01:47:55 7 Q. If you look at the last sentence of the second
01:48:00 8 paragraph on page 3 of this Exhibit 3304 can you tell
01:48:06 9 me if you would agree with that statement?
01:48:08 10 A. You mean in the money world of advertising?
01:48:11 11 Q. No. The last sentence of the second paragraph
01:48:15 12 if it could be reliably predicted. Page 3, last
01:48:21 13 sentence, second paragraph.
01:48:23 14 A. Okay. No. I would say that would strengthen
01:48:43 15 the notion that it may be a cause, but it still
01:48:47 16 wouldn't be definitive.
01:48:49 17 Q. I take it that you simply reject the concept of
01:48:56 18 using what they're referring to as general or
01:49:00 19 probablistic cause?
01:49:03 20 A. That's correct, because probablistic cause
01:49:06 21 itself is almost -- almost belies the notion that
01:49:11 22 it's a hundred percent.
01:49:17 23 Q. And you need cause to be a hundred percent to
01:49:23 24 use that term?
01:49:24 25 A. As near to a hundred percent as you can get and

01:49:28 1 ruling out all other causes or potential causes.
01:49:32 2 Q. How close to one hundred percent do you have to
01:49:35 3 get to --
01:49:36 4 A. I don't know. You've got to be closer than what
01:49:38 5 they've got. The biggest problem they have is they
01:49:42 6 haven't ruled out potential alternative causes.
01:49:44 7 Q. And as long as there are potential alternative
01:49:48 8 causes then you don't believe that it's proper to say
01:49:51 9 that smoking causes any particular disease even among
01:49:59 10 a percent of the population?
01:50:01 11 A. As long as they haven't ruled out the
01:50:05 12 possibility of other causes to the point that one can
01:50:09 13 say it definitely was not those other things, that's
01:50:15 14 correct.
01:50:30 15 Q. And if you'll look at the first paragraph on the
01:50:35 16 fourth page of this Exhibit 3304. My question is
01:51:01 17 going to pertain to the second sentence. It may
01:51:04 18 therefore be concluded that for certain groups of
01:51:08 19 people smoking causes certain diseases to be higher
01:51:12 20 than it otherwise would be.
01:51:15 21 A. I'm just waiting to read it without the sound in
01:51:18 22 the background.
01:51:20 23 Q. Sure.
01:52:06 24 A. Your question is --
01:52:10 25 Q. Do you agree with that conclusion in the second

01:52:16 1 sentence?
01:52:16 2 A. In the second sentence of the first paragraph?
01:52:19 3 Q. Yes, of page 4, Exhibit 3304, and I'll read the
01:52:23 4 sentence for the record. It may therefore be
01:52:26 5 concluded that for certain groups of people smoking
01:52:30 6 causes the incidence of certain diseases to be higher
01:52:32 7 than it would otherwise be.
01:52:34 8 A. I would say that it maybe concluded that for
01:52:39 9 certain groups of people that smoking may cause the
01:52:41 10 incidence of certain diseases to be higher.

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01:52:44 11 Q. So you would disagree with the conclusion as
01:52:49 12 it's written there?
01:52:49 13 A. That's correct.
01:52:51 14 MR. LOVE: Why don't we mark this.
01:52:51 15 (Plaintiffs' Deposition Exhibit 3305 - interview
01:53:41 16 transcript - marked for identification.)
01:53:42 17 BY MR. LOVE:
01:53:42 18 Q. Dr. Verhalen, I'll show you what we have marked
01:53:46 19 as Exhibit 3305 of your deposition. It's a
01:53:51 20 transcript of an interview. It's titled A Dying
01:53:56 21 Industry on the first page, and among the
01:53:59 22 participants was Dr. Greene who we were just talking
01:54:03 23 about in the previous Exhibit 3304.
01:54:12 24 My questions will pertain to Dr. Greene's
01:54:16 25 statements on page 3 of the exhibit, numbered page 3.

01:54:25 1 A. I'm going to have to back up to page 2 to put
01:54:42 2 it in context, all right?
01:55:29 3 Q. In that first sentence of Dr. Greene's statement
01:55:32 4 there I think this is a very naive view and quite
01:55:39 5 simply I believe that just to say evidence is
01:55:41 6 statistical, and can't prove anything is a
01:55:44 7 nonsense --
01:55:46 8 MR. BORMAN: Before we go any further,
01:55:50 9 I just have been conferring with our local counsel.
01:55:54 10 I'm not sure, frankly, that it's appropriate to show
01:55:58 11 him documents that were merely cited in another
01:56:03 12 document that was pre-designated.
01:56:04 13 It seems to me the whole idea is for him to
01:56:07 14 have a chance to review these documents before he
01:56:10 15 sees them, and that if he's going to look at them,
01:56:14 16 these documents themselves should have been listed as
01:56:18 17 well as the document that merely sites them.
01:56:21 18 So Mr. Wilson has stepped out for a moment
01:56:27 19 to get the order so we can think about this a little
01:56:30 20 further, but I'd appreciate if we could take just a
01:56:35 21 momentary break to decide what our position is on
01:56:38 22 this.
01:56:39 23 It may well be that this is perfectly
01:56:42 24 appropriate, but frankly I'm not sure.
01:56:46 25 MR. LOVE: My response is we have

01:56:47 1 received pre-designation of documents from defendants
01:56:51 2 and they've done exactly the same thing; they
01:56:54 3 designated reports in all the documents cited therein
01:56:57 4 or listed therein, and these documents are
01:57:01 5 specifically listed in the materials that we
01:57:03 6 submitted with Dr. Samet's report.
01:57:06 7 It's not like they vaguely refer. These
01:57:12 8 Bates numbers appear in --
01:57:15 9 MR. BORMAN: I agree with that.
01:57:16 10 MR. LOVE: Further it's my
01:57:18 11 understanding that particularly since Dr. Verhalen
01:57:21 12 lists Dr. Samet's report as something that he did
01:57:26 13 review, that it's fair to ask him questions about the
01:57:29 14 materials that Dr. Samet relied on and listed in his
01:57:35 15 report.
01:57:35 16 MR. BORMAN: Fair enough.
01:57:36 17 Nevertheless, we would like to have a look at the

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01:57:40 rule that the judge produced, and if we could just
01:57:43 take a moment to do that before you inquire him
01:57:46 further of these documents I would certainly
01:57:50 appreciate it. Off the record.
01:57:54 (Discussion held off the record.)
01:58:06 MR. BORMAN: If I may, I'll give you
01:58:09 my view on this. Mr. Wilson has provided me the
01:58:13 order regarding deposition expert witness provisions

01:58:16 and paragraph Roman numeral I-G, paragraph -- sub
01:58:32 paragraph 2 does state that the pre-designation of
01:58:37 deposition exhibits shall consist of identifying
01:58:40 Bates numbers.
01:58:44 I don't think that that was done in the
01:58:48 case of these documents. I understand that the Samet
01:58:53 report contains the Bates numbers, but I don't
01:58:57 believe these documents were designated and cited
01:59:01 with their Bates number.
01:59:03 Therefore, I conclude this is a violation
01:59:06 of the order; however, I am willing to let the
01:59:09 examination with these documents continue for now,
01:59:13 but I guess I would reserve my right to object and
01:59:18 stop the review at some later point.
01:59:22 MR. LOVE: We will go forward on that
01:59:25 basis then, rather than arguing about it. You can
01:59:31 see my point is different.
01:59:36 BY MR. LOVE:
01:59:36 Q. Dr. Verhalen, back to Exhibit 3305 I believe. I
01:59:55 was asking you a question I believe about the first
01:59:58 sentence under the -- from Dr. Greene near the top of
02:00:06 numbered page 3 of the report.
02:00:12 I'll read it once again. It says I think this
02:00:14 is a very naive view and quite simply I believe that
02:00:18 just to say evidence is statistical and you can't

02:00:21 prove anything is a nonsense.
02:00:24 My question to you is, first, do you agree with
02:00:29 that statement, the part that says just to say
02:00:32 evidence is statistical and can't prove anything is
02:00:35 nonsense?
02:00:36 A. Depending on the context in which it's used, I
02:00:40 have no problem with it.
02:00:42 Q. Can statistical evidence be used to prove that
02:01:01 some percentage of a population that contracts lung
02:01:12 cancer did so because of smoking?
02:01:14 A. No. The point I was making when I said I would
02:01:21 agree with this depending upon the context of it is
02:01:26 that I believe that you cannot prove anything with
02:01:31 statistics. Statistics does not prove, it merely
02:01:34 supports an association.
02:01:38 Whether or not it's a nonsense is the point that
02:01:41 I said I might be inclined to agree with, depending
02:01:45 on the context.
02:01:47 If you're looking at general indications of what
02:01:52 may or may not be the case, and you have strong
02:01:55 statistical evidence, you can probably say well, it's
02:01:58 not proven, but it's sufficiently strong that given
02:02:02 the ramifications of what we want to do aren't all
02:02:07 that Draconian, it's probably a safe bet to go ahead.

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02:02:13 25 Engineers do this all the time when they're

02:02:16 1 designing products, manufacturers do it all the time
02:02:18 2 when they're marketing products so they go ahead. If
02:02:23 3 they don't sell, they don't sell.
02:02:25 4 Q. Don't engineers and manufacturers do the same
02:02:27 5 thing with respect to safety concerns about products
02:02:30 6 on occasion?
02:02:31 7 A. Yes, they do.
02:02:33 8 Q. They rely on statistical evidence to make
02:02:35 9 decisions about how to design the product safety?
02:02:39 10 A. Yes, they do.
02:02:40 11 Q. And if they're wrong about one of those
02:02:44 12 decisions one of the ramifications would be that
02:02:46 13 people would be hurt or killed?
02:02:47 14 A. One of the ramifications would be that people
02:02:50 15 could be hurt or killed.
02:02:51 16 Q. But for those types of potentially life and
02:02:56 17 death decisions manufacturers and engineers often
02:03:00 18 rely on statistical evidence to reach their
02:03:05 19 conclusions?
02:03:06 20 A. They're probably adding a lot more to it, the
02:03:11 21 economic decision, how serious the injury would be,
02:03:14 22 the likelihood of the injury, what they're pay-out
02:03:18 23 would have to be to support that. Those are business
02:03:21 24 decisions made every day.
02:03:22 25 Q. But they might look at a situation where there

02:03:25 1 is data on how one safe system works and another, and
02:03:30 2 conclude on the basis of that which is the better
02:03:34 3 safety system for their product, yes?
02:03:37 4 A. In their particular environment, yes. We're
02:03:41 5 getting pretty far afield here.
02:03:43 6 Q. Well, you mentioned engineers and manufacturers
02:03:47 7 and I just wanted to follow up what your opinion is
02:03:50 8 in that context.
02:03:52 9 If you look at the last sentence of Dr. Greene's
02:03:57 10 transcription there, particularly the end of the
02:04:01 11 sentence where he says that I think that in a
02:04:03 12 nutshell what we can show is that smoking is a very
02:04:07 13 serious causal factor as far as the smoking situation
02:04:11 14 is concerned, you would agree with that statement
02:04:14 15 based on what you reviewed?
02:04:17 16 A. Not quite.
02:04:17 17 Q. How would have you changed the statement?
02:04:20 18 A. In a nutshell what we can show is that smoking
02:04:24 19 may be a serious factor.
02:04:26 20 Q. Switching gears, Dr. Verhalen, one of the things
02:05:18 21 you discuss in your expert report is your work in
02:05:24 22 creating I believe the NEISS system; is that the
02:05:31 23 right acronym?
02:05:31 24 A. Yes, that's correct.
02:05:32 25 Q. And that stands for?

02:05:34 1 A. Nationally Electronic Injury Surveillance
02:05:38 2 System.
02:05:38 3 Q. Am I correct that you actually were involved in

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02:05:41 the creation of that system?
02:05:43 A. I conceived it and led its creation.
02:05:48 Q. You promoted the concept that various government
02:05:59 agencies should rely on a single national
02:06:02 surveillance system for dramatic injuries, correct?
02:06:05 A. That's correct.
02:06:06 Q. Why was that important?
02:06:11 A. In the context which I was promoting it?
02:06:14 Q. Yes. Why did you promote that type of system?
02:06:17 A. Because up until that time people who were
02:06:21 involved in the field of safety generally tried to
02:06:26 aggregate studies from many different areas with many
02:06:30 different designs over many different time frames to
02:06:33 come up with national statistics when all they really
02:06:38 had in hand was various sets of local data and they
02:06:44 tried to make generalizations for the nation.
02:06:48 Q. What benefits did you perceive in establishing
02:06:52 the NEISS system?
02:06:55 A. The Consumer Product Safety Commission was
02:07:00 charged with responsibility for assessing the scope
02:07:03 and magnitude of product related injury problems and
02:07:08 the NEISS would provide us with the capability to

02:07:13 measure at least one segment of the medical care
02:07:16 delivery system which treated product related
02:07:22 injuries and allow us to set priorities for what it
02:07:27 was we were going to be taking a closer look at.
02:07:35 Q. Did the NEISS system include any self reported
02:07:43 data by the injured victim?
02:07:44 A. Yes.
02:07:45 Q. What type of self reported data was gathered
02:07:48 from the injured victim?
02:07:50 A. When a victim presented in the hospital
02:07:53 emergency room they were quizzed over what product
02:07:59 they were using, when they were injured, not
02:08:03 necessarily what product caused the injury, to
02:08:06 determine whether or not there was an association
02:08:07 between an injury and an incident that was treated in
02:08:10 the emergency room.
02:08:11 Q. Were they asked to identify the product by
02:08:17 manufacturer at all?
02:08:18 A. No.
02:08:19 Q. Just by generic type of product?
02:08:22 A. That's correct.
02:08:23 Q. Were they asked how their injury occurred, what
02:08:28 they were doing when it occurred?
02:08:31 A. Usually only in the most general sense. When
02:08:33 the system first started we didn't bother asking that

02:08:36 because there was no way to get that on the record.
02:08:39 Later we began to ask it in an effort to get a
02:08:42 handle on what the product was because there were so
02:08:45 many products that were being reported it was very
02:08:49 difficult sometimes to tell just from a single code
02:08:52 what the product was.
02:08:53 Q. Did you make any effort to gather information
02:08:56 from the victim as to how they were using the product
02:08:59 at the time they were injured?
02:09:01 A. If the case was selected for in-depth

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02:09:04 11 investigation, yes, we did.
02:09:06 12 Q. But in terms of the general operation of the
02:09:12 13 system in gathering data, at the initial stages did
02:09:17 14 you make any effort to determine how the victim was
02:09:20 15 using the product at the time they were injured?
02:09:22 16 A. No. The question might have been phrased a
02:09:25 17 variety of different ways; they might have said how
02:09:27 18 did your accident occur, how did your injury occur,
02:09:31 19 what product were you using when this injury
02:09:34 20 occurred.
02:09:35 21 Whatever information was put down was more to
02:09:41 22 elicit products more discreetly than to lend itself
02:09:46 23 to any kind of an analysis.
02:09:48 24 Q. Did the NEISS System use physician diagnosis in
02:09:55 25 any way?

02:09:56 1 A. Only in the most general sense.
02:09:58 2 Q. How was that?
02:09:59 3 A. Well, the system was designed to work in an
02:10:02 4 environment that's not friendly to the collection of
02:10:07 5 data for purposes that don't have direct effect on
02:10:11 6 the treatment of the patient.
02:10:12 7 We recognized that working in a hospital
02:10:14 8 emergency room you had to keep the questions simple
02:10:19 9 and straightforward if you expected the people in the
02:10:22 10 hospital to report them routinely, regularly and
02:10:26 11 correctly.
02:10:26 12 The more demand you put on them, the less likely
02:10:30 13 you were to get answers at all, much less correct
02:10:33 14 answers.
02:10:33 15 Q. How does that relate to the type of information,
02:10:47 16 diagnostic information, you obtained from physicians?
02:10:50 17 A. The only information we tried to put down was,
02:10:53 18 for example, the type of injury, whether it was a
02:10:55 19 laceration, a fracture, a bruise, a contusion,
02:10:59 20 abrasion an avulsion.
02:11:04 21 There were perhaps twelve or fifteen different
02:11:07 22 categories of injury, and we identified the body part
02:11:11 23 associated with the single most serious injury,
02:11:15 24 recognizing that several people would present with
02:11:18 25 more than a single injury.

02:11:20 1 This was merely to be used as a means by which
02:11:23 2 the Commission could decide what case it wanted to
02:11:27 3 investigate and often find out more about and give us
02:11:30 4 a general guideline on the directions the Commission
02:11:33 5 ought to be looking to dedicate its resources for
02:11:38 6 research in the future.
02:11:41 7 Q. Does information about the type of injury come
02:11:43 8 from the physician or from the victim?
02:11:46 9 A. It came from the hospital records so the
02:11:50 10 physician, the nurse or whoever was recording it on
02:11:53 11 the hospital record.
02:11:53 12 Q. Did the NEISS System -- was it referred to as
02:12:23 13 NEISS?
02:12:24 14 A. NEISS, that's correct.
02:12:26 15 Q. Did the NEISS System gather any information on
02:12:29 16 the medical history of the victim?
02:12:30 17 A. No.

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02:12:31 18 Q. Did it gather any demographic information about
02:12:37 19 the victim?
02:12:38 20 A. Only, again, in the very most general sense, the
02:12:43 21 age and sex of the victim.
02:12:46 22 Q. What was the source of that data?
02:12:49 23 A. The hospital record.
02:12:53 24 Q. And you would expect --
02:12:56 25 A. Let's be correct, the emergency room record.

02:12:59 1 Q. Is it fair to expect that the age data that the
02:13:03 2 hospital record reflects or the emergency room record
02:13:06 3 reflects would have been the victim's self reported
02:13:10 4 age date?
02:13:11 5 A. Or his surrogate, yes.
02:13:12 6 Q. Did the NEISS System use ICD-9 codes in any way?
02:13:25 7 A. No.
02:13:25 8 Q. Did it use any diagnostic codes?
02:13:28 9 A. Codes that we had generated ourselves for the
02:13:31 10 diagnosis and body part combinations. It was a four
02:13:36 11 digit code.
02:13:38 12 Q. Do I recall seeing in your CV that you have or
02:13:46 13 maybe are presently involved in the tenth version of
02:13:52 14 the ICD codes?
02:13:55 15 A. I had been involved while I was in government as
02:13:58 16 were many other senior federal scientists in the
02:14:03 17 attempt to generate a tenth revision of the -- well,
02:14:07 18 the ICD tenth code. I don't believe it's out yet. I
02:14:12 19 have not seen it.
02:14:13 20 Q. How would you compare the codes that you
02:14:15 21 established at the CPSC, these four digit codes, to
02:14:19 22 the ICD-9 codes?
02:14:21 23 A. Much more simplistic. We determined fairly
02:14:25 24 early on that if we had demanded the rigor of the
02:14:29 25 ICD-9 code we would never get a hospital to assist.

02:14:33 1 Q. You would never have been able to get the
02:14:35 2 assistance of the employees of the circumstances at
02:14:40 3 the hospital?
02:14:41 4 A. That's correct. And the hospital probably
02:14:42 5 would have been unwilling to spend the time to devote
02:14:48 6 to assisting us.
02:14:51 7 Q. Do you believe it would also make sense for
02:15:08 8 federal and state governments to rely on a single
02:15:11 9 national survey of health service use expenditure and
02:15:15 10 source of payment?
02:15:17 11 A. No, quite the contrary.
02:15:19 12 Q. Why is that?
02:15:20 13 A. I don't even believe that the states and cities
02:15:25 14 should rely on national data on product related
02:15:30 15 injuries.
02:15:30 16 My notion of an ideal national system would be
02:15:39 17 statistically valid state systems which would report
02:15:43 18 ultimately to a central clearinghouse so that you
02:15:45 19 have national data, but each state would have
02:15:50 20 independently statistically available data on its own
02:15:54 21 condition, and I've maintained since this since this
02:15:57 22 system was developed back in 1971.
02:15:59 23 Q. You're talking about the NEISS System?
02:16:01 24 A. Yes.

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02:16:01 Q. Has that ever come about?

02:16:03 A. No.
02:16:04 Q. Does the CPSC continue to use the NEISS System?
02:16:09 A. Yes.
02:16:10 MR. LOVE: Would you mark this?
02:16:10 (Plaintiffs' Deposition Exhibit No. 3306 - report -
02:18:12 marked for identification.)
02:18:13 BY MR. LOVE:
02:18:13 Q. Dr. Verhalen, I'll show you what we have marked
02:18:18 as Deposition Exhibit 3306. These are excerpts from
02:18:22 the National Commission on Product Safety
02:18:28 entitled Product and Injury Identification.
02:18:29 I understand you were one of the authors of
02:18:31 that?
02:18:32 A. That's correct.
02:18:32 Q. I have a copy of the full report or at least
02:18:36 full Volume I of the report here, and I've tagged
02:18:39 the pages that are included in the excerpts so if you
02:18:50 would like to look at the whole book I'll leave it in
02:18:55 front of you.
02:18:56 If you turn to page 81, numbered page 81, in the
02:19:03 excerpts The page numbers are very hard to read.
02:19:08 A. Okay.
02:19:13 Q. Is this a discussion of the NEISS System?
02:19:15 A. No. The NEISS System didn't exist at this time.
02:19:19 Q. What is it a discussion of then?

02:19:23 A. It's a system of an ideal way to follow up
02:19:43 product related injuries, but it didn't exist at that
02:19:47 time.
02:19:47 We had a prototype system that was operating
02:19:57 called the hospital injury -- Hospital Emergency Room
02:20:02 Injury Reporting System in which we had fourteen
02:20:07 hospitals reporting to the National Commission on
02:20:09 Product Safety all injuries treated in their
02:20:14 emergency room.
02:20:15 As I recollect that system ran for about nine
02:20:16 months. In this we had five in the Memphis, Shelby
02:20:21 County, Tennessee area so we would have a distance
02:20:25 location, and we had nine in the Washington D.C.
02:20:28 metropolitan area.
02:20:31 We asked them to code information for us using a
02:20:37 code we developed from the Sears Robuck catalog,
02:20:43 their list of products, all products associated with
02:20:46 injuries treated in their emergency rooms, and we
02:20:52 collected those data from them electronically by use
02:20:55 of push button telephone on a daily basis.
02:20:59 I believe we collected around eighty or
02:21:02 eighty-five thousand cases over a nine month period
02:21:05 from these fourteen hospitals, and that prototype
02:21:09 system is what eventually led to the creation of the
02:21:12 NEISS System which was a statistically represented

02:21:15 sample of hospital emergency rooms to report.
02:21:17 But it was designed principally for two reasons,
02:21:20 first to test the capability of using the hospital

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02:21:25 emergency room on a routine basis to collect limited
02:21:29 information which would simply raise flags so that we
02:21:32 could take a closer look, and secondly to provide
02:21:35 some data to the National Commission so we would have
02:21:39 something hard to work with rather than the hundreds
02:21:41 of local studies that they had been trying to work
02:21:43 with before I came in as the head of the task force
02:21:47 chief.
02:21:47 Q. When you eventually developed the NEISS System I
02:21:49 take it it was no longer reported with the push
02:21:52 button telephone?
02:21:54 A. That's correct, because that was logistically a
02:21:57 very difficult system to manage every hospital to
02:22:00 report at a prescribed time during the day, and we
02:22:03 would have -- our computer would answer -- we
02:22:08 actually had a key punch machine that would answer
02:22:11 the telephone and then the coder transmitter in the
02:22:15 hospital would continue pushing the buttons on the
02:22:18 phone which we had installed in each hospital
02:22:21 specifically for that purpose.
02:22:23 A code transformer on the other side of the line
02:22:26 would cause the key punch machine to punch a card,

02:22:32 and then each morning we would compile these so we
02:22:35 could choose cases for follow up.
02:22:37 Q. And I believe you told me that what we see being
02:22:45 described here on pages 81, et cetera, is an ideal
02:22:48 system? Is that the word you used?
02:22:51 A. This is a system that I felt if the government
02:22:53 were to develop a permanent federal presence in this
02:22:57 area that they would have a system that would have
02:23:00 some of these capabilities.
02:23:01 Q. And here at the bottom of page 81 you discuss
02:23:04 the surveillance component of that system; is that
02:23:10 correct?
02:23:10 A. Yes.
02:23:11 Q. And that component would be gathering the injury
02:23:22 information; is that correct?
02:23:24 A. That's correct.
02:23:27 Q. Having reviewed the Zeger, Miller, Wyant report
02:23:45 we talked about earlier today would you agree there
02:23:50 is an analogy between the surveillance system you're
02:23:54 describing here for injuries and the billing data
02:23:58 that they used in their work, the actual Medicaid
02:24:03 billing data, that indicated how much was paid and
02:24:08 had diagnostic ICD-9 codes?
02:24:15 A. What's the question?
02:24:17 Q. Is that sort of an analogy to the surveillance

02:24:24 system that you're describing here for injury cases?
02:24:27 A. I don't think it is quite the same. I mean
02:24:29 there may be some similarities in that you're going
02:24:33 to data that exists for another purpose and gathering
02:24:37 them for yet a new purpose.
02:24:39 In our case what we were trying to do is take an
02:24:42 aggregate of information -- let me stop for a moment
02:24:48 and ask you, are you talking about the idealized
02:24:51 system I'm talking about here or are you talking
02:24:54 about the system we were running during the National

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02:24:57 Commission --
02:24:57 Q. First let's talk about what you're talking about
02:25:01 here on page 81 and 82 of the document.
02:25:04 A. This would be designed to take an aggregate of
02:25:13 information, a variety of sources, which ultimately
02:25:15 would be able to give you a national feel for what
02:25:18 was happening and allow the agency to turn its
02:25:23 attention in the direction of those which seem to be
02:25:25 the biggest actors on the scene either in terms of
02:25:29 just sheer frequency of numbers so that those
02:25:32 products being the most frequently reported might be
02:25:35 products that the Commission might want to put high
02:25:38 on its priority list to take a look at to see whether
02:25:43 or not there are any of these products they can fix,
02:25:45 or products that are associated in hospital emergency

02:25:48 room data more frequently with death than other
02:25:51 products might be taken a closer look at, or products
02:25:56 which happen to fit some of the preconceptions of
02:26:00 whomever would be running this organization could be
02:26:03 taking a look at because that was -- I was enough of
02:26:08 a practical realist at this time to recognize that I
02:26:12 worked in a political environment.
02:26:13 And actually after I got our system, they had
02:26:18 their own products before they saw the data.
02:26:21 Q. When you say the system, is that the NEISS
02:26:23 System?
02:26:25 A. The NEISS System which is the first
02:26:27 statistically balanced system we had.
02:26:31 Q. There is a surveillance component of the NEISS
02:26:33 System, correct?
02:26:34 A. Yes.
02:26:35 Q. And can you tell me what the surveillance
02:26:37 component is?
02:26:38 A. Of the NEISS System?
02:26:39 Q. Yes.
02:26:40 A. It's the reporting of cases from hospital
02:26:43 emergency rooms on a daily basis directly to a
02:26:47 central computer so that cases can be selected for
02:26:50 follow up and so that the Commission can set
02:26:54 priorities.

02:27:08 Q. Did the NEISS System as it eventually developed
02:27:23 also make use of ancillary data from federal studies
02:27:33 such as the National Health Interview Survey?
02:27:36 A. We tried that. The NEISS System was collecting
02:27:47 data only on injuries that were treated in hospital
02:27:50 emergency rooms.
02:27:52 In the greater scheme of medical care delivery
02:27:56 for injuries, hospital emergency rooms only comprised
02:28:01 of about forty or forty-two percent of all product
02:28:05 related injuries if you define a product related
02:28:07 injury as something which results in at least one
02:28:11 day's restricted activity or competent professional
02:28:17 medical treatment.
02:28:19 We felt that it would be necessary to take a
02:28:21 look at whether or not we were getting a fair look at
02:28:27 what products were associated with these injuries by
02:28:31 taking a look at what kinds of injuries were treated

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02:28:35 18 in physician's offices as well.
02:28:37 19 Now, this presented an entirely different
02:28:40 20 problem. Physicians individually saw far fewer
02:28:43 21 patients for trauma than did emergency rooms so you
02:28:47 22 had to go to many more physicians.
02:28:50 23 The alternative would have been to take a look
02:28:53 24 at the National Center for Health Statistics and its
02:28:59 25 annual household interview survey.

02:29:01 1 Q. Which is the HIS?
02:29:04 2 A. HIS, Health Interview Survey. The problem with
02:29:08 3 that is that was not free for us. We had to come up
02:29:11 4 with the money to pay for that because that is a
02:29:14 5 survey that is conducted for the National Center for
02:29:17 6 House Statistics by the U.S. Bureau of Census.
02:29:22 7 At the time and I think to this day it was
02:29:24 8 around forty, forty-five thousand households a year,
02:29:28 9 household interview surveys, where they were actually
02:29:33 10 visited and filled out questionnaires.
02:29:34 11 The window for which they were asking questions
02:29:37 12 was I believe within the past month; have you had any
02:29:41 13 of the following conditions or have you done this.
02:29:43 14 Even with four thousand households, since we
02:29:46 15 were representing in the Consumer Products Safety
02:29:49 16 Commission's interests more than fifteen thousand
02:29:52 17 different products a raid over maybe a thousand
02:29:56 18 different codes, we determined statistically that we
02:29:58 19 would probably need two year's worth of data to be
02:30:02 20 able to make any estimates on even the most
02:30:04 21 frequently reported products reported through that
02:30:08 22 system.
02:30:09 23 So as a next best effort to try to get a handle
02:30:12 24 on it they decided to open the window for product
02:30:17 25 related injuries for -- I think it was within the

02:30:21 1 past year or past six months.
02:30:23 2 Q. By changing the interview question?
02:30:26 3 A. By changing the interview question on product
02:30:29 4 related injuries. This was only for one year, and I
02:30:32 5 don't remember what year it was. It might have been
02:30:38 6 1974, '75, somewhere around there.
02:30:42 7 The data we got were very sparse and permitted
02:30:49 8 only the most crude comparisons, but we were able to
02:30:53 9 determine that the first twenty-five products in
02:30:57 10 frequency of occurrences being recorded through the
02:31:00 11 NEISS for the same time period were included in the
02:31:06 12 first thirty products reported through physicians'
02:31:08 13 offices.
02:31:09 14 And while there may have been small
02:31:12 15 differences - for instance, bicycles may have ranked
02:31:15 16 first in hospital emergency rooms and second in the
02:31:18 17 physician's offices - we couldn't analyze those kinds
02:31:22 18 of differences because there were just too few data
02:31:25 19 to analyze.
02:31:25 20 But we knew for the most part that with the
02:31:28 21 hospital emergency room data we were getting a
02:31:31 22 reasonable snapshot of what was happening and
02:31:35 23 therefore without having to spend that money every
02:31:38 24 year.

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02:31:38 25 But perhaps by going back periodically to the

02:31:41 1 National Center for House Statistics to reproduce the
02:31:45 2 study, we could go ahead with the NEISS and use that
02:31:48 3 for general guidance.
02:31:51 4 And we did that, but we never did go back to the
02:31:54 5 National Center to repeat it again because it was too
02:31:57 6 expensive.
02:31:58 7 Q. How expensive was it?
02:31:59 8 A. Well, back in 1974 or '75, whenever we did it
02:32:05 9 the first time, was fifty thousand dollars and our
02:32:08 10 entire agency budget was less than the cost of an air
02:32:12 11 craft, thirty million dollars. That's about the cost
02:32:31 12 of a Beechcraft.
02:32:32 13 Q. So ideally if you had the funds available you
02:32:36 14 would have finished to make use of the HIS on a
02:32:42 15 periodic basis?
02:32:44 16 A. Just to calibrate the system. Not to routinely
02:32:48 17 collect the data, just to make sure that things
02:32:51 18 didn't begin to shift too much. But even that would
02:32:55 19 not be the ideal.
02:32:57 20 The ideal as I mentioned to you earlier would be
02:33:00 21 fifty independent state systems.
02:33:04 22 Q. At the time you were contemplating using the
02:33:06 23 Health Interview Survey were you aware that it had
02:33:10 24 information that was based on the self reporting
02:33:16 25 health status?

02:33:17 1 A. No question.
02:33:17 2 Q. And did it also use ICD-9 or a predecessor of
02:33:24 3 ICD-9 codes?
02:33:26 4 A. There might have been, but we weren't using
02:33:28 5 those. The ICD-9 code was not used on our data.
02:33:34 6 Secondly, the -- what was the point I wanted to
02:33:38 7 make? It will come back.
02:33:54 8 The other point I want to make - I will finish
02:33:57 9 my answer now - was that we discovered through that
02:34:02 10 and through a subsequent study conducted for us that
02:34:07 11 memory decay was a real problem when you're asking
02:34:12 12 for people to report on conditions that they have
02:34:16 13 suffered.
02:34:18 14 For example, we took the NEISS data that we got
02:34:21 15 from certain hospital emergency rooms and did a
02:34:24 16 follow up by calling the people at their homes and
02:34:27 17 asking them questions about their accident, and we
02:34:30 18 found that many of them in the first place didn't
02:34:33 19 even recall having been to the emergency room to be
02:34:37 20 treated perhaps even a week or ten days earlier if it
02:34:39 21 was a relatively minor injury.
02:34:42 22 For instance, if it was an avulsion to the
02:34:45 23 finger, they forgot all about it; it doesn't even
02:34:49 24 hurt any more, it's not even wrapped up any more.
02:34:52 25 That was sufficient for me to direct that,

02:34:57 1 henceforth, all investigations would be assigned
02:34:59 2 ideally within the first twenty-four hours after we
02:35:02 3 hear about the events so hopefully we can get an

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02:35:06 4 investigator on the scene before these kinds of
02:35:09 5 memories degrade it so we can get the kind of
02:35:12 6 information we need to get. But we always recognized
02:35:16 7 we would get colored information.
02:35:17 8 Q. Isn't memory decay one of the concerns you've
02:35:20 9 raised with respect to the National Medical
02:35:22 10 Expenditure Survey?
02:35:26 11 A. Indeed it is.
02:35:31 12 Q. Are you concerned about memory decay when the
02:35:35 13 question being asked is are you currently being
02:35:38 14 treated for a disease?
02:35:41 15 A. Are you currently being treated for a disease?
02:35:46 16 Not whether or not the answer to that is yes or no,
02:35:49 17 but if the question has to do with what disease
02:35:54 18 they're being treated for, yes.
02:35:56 19 I think it may not be memory decay so much as it
02:36:01 20 is misunderstanding or misinterpretation. But there
02:36:04 21 is not a very good correlation between what the
02:36:07 22 medical care provider would put on their form and
02:36:11 23 what the medical care recipient would put on the
02:36:15 24 form.
02:36:15 25 Q. Let's just talk about memory decay as opposed to

02:36:18 1 other concerns you might have. My question is, are
02:36:21 2 you concerned about memory decay when the question is
02:36:24 3 are you currently being treated for disease?
02:36:26 4 A. Probably not.
02:36:28 5 Q. Are you concerned about memory decay when the
02:36:31 6 question is are you a smoker?
02:36:35 7 A. Are you a smoker now?
02:36:37 8 Q. Sure. If that's the question, are you concerned
02:36:40 9 about memory decay?
02:36:41 10 A. Probably not.
02:36:42 11 Q. If the question is have you ever smoked more
02:36:45 12 than some amount of packs for some period of time,
02:36:51 13 are you concerned about memory decay there?
02:36:53 14 A. Probably so.
02:36:54 15 Q. Why?
02:36:56 16 A. Because in the first place it's not
02:36:58 17 contemporary, it's have you ever. That becomes a
02:37:02 18 problem.
02:37:04 19 When you get down to a very specific number of
02:37:07 20 such things, that becomes even more of a problem.
02:37:11 21 Someone who had smoked and quit smoking, for
02:37:15 22 example, might or might not relate to the fact that a
02:37:19 23 hundred cigarettes is only five packs and that no,
02:37:25 24 they had only smoked a couple a week five or ten
02:37:28 25 years earlier. I'm not sure that kind of thing would

02:37:31 1 be very reliable.
02:37:32 2 Q. For someone who had smoked for more than a year
02:37:39 3 on a regular basis would you be concerned about
02:37:43 4 memory decay on the question have you ever been a
02:37:46 5 smoker?
02:37:47 6 A. Maybe not so much memory decay as bias. A lot
02:37:51 7 of people just don't want to admit that they ever
02:37:56 8 smoked.
02:37:56 9 Q. I'm trying to restrict the question to memory
02:37:58 10 decay.

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02:37:59 A. It may not be memory decay, but it would not
02:38:03 necessarily be reliable.
02:38:05 Q. And in connection with serious diseases such as
02:38:13 cancer and the other diseases on the list in the
02:38:18 Zeger, Wyant, Miller report, major smoking
02:38:22 attributable diseases, even if the question is have
02:38:26 you ever had one of those diseases, given the
02:38:29 seriousness of it are you concerned about memory
02:38:32 decay?
02:38:33 A. Probably not.
02:38:33 MR. LOVE: Why don't we take a break
02:38:49 here.
02:38:58 (Recess taken.)
02:39:00 BY MR. LOVE:
02:39:00 Q. Dr. Verhalen, are you ready to resume?

02:39:12 A. I'm ready.
02:39:13 Q. You know from your review of the report of Drs.
02:39:17 Zeger, Wyant and Miller that they relied primarily on
02:39:22 the National Medical Expenditure Survey as a data
02:39:26 source for that report along with other data sources
02:39:30 including billing information, but in terms of survey
02:39:35 information that was the primary survey they relied
02:39:38 upon; is that correct?
02:39:38 A. Yes.
02:39:38 Q. Have you used -- can I use the acronym NMES to
02:39:45 refer to the National Medical Expenditure Survey; can
02:39:49 we use NMES to mean --
02:39:51 A. Have I used it for anything?
02:39:54 Q. My question is very simply can we agree to use
02:39:57 it as an acronym for --
02:40:00 A. Yes, that's fine.
02:40:02 Q. My question now is, prior to your involvement in
02:40:05 the three tobacco cases you've told me about had you
02:40:09 made any use of NMES in your work?
02:40:14 A. No, I have not.
02:40:15 Q. And you understand that NMES is a stratified
02:40:30 multi-stage area of probability survey?
02:40:36 A. Yes.
02:40:36 Q. And I understand it's your opinion that NMES
02:40:44 should be used only at the national level, not at any

02:40:48 state level; is that correct?
02:40:50 A. Not at any state level, that's correct.
02:40:53 Q. Have you made any search for articles or reports
02:41:00 that use NMES to estimate health care costs or
02:41:07 anything else for that matter at a state level?
02:41:10 A. No, I haven't.
02:41:11 Q. Have you made any search for articles or papers
02:41:17 that make use of NMES at anything smaller than any
02:41:27 one of the four regions that NMES uses -- let's back
02:41:35 up.
02:41:36 You understand that NMES data was gathered and
02:41:40 identified in one of four regions of the country; is
02:41:43 that correct?
02:41:43 A. Yes.
02:41:43 Q. And there was the midwest region, for instance,
02:41:46 that included Minnesota, correct?
02:41:48 A. Yes.

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02:41:48 Q. And my question is, at any geographic level
02:41:53 smaller than one of those four regions have you made
02:41:56 any search to see whether there are any papers or
02:42:00 articles where people use NMES at a smaller
02:42:06 geographic region?
02:42:06 A. No, I haven't.
02:42:08 Q. In your opinion is there any more of a reliable
02:42:13 national survey of disease and health care costs than

02:42:17 NMES?
02:42:21 A. I don't know.
02:42:22 Q. You don't know of any?
02:42:25 A. No. The Health Interview Survey, of course, is
02:42:32 another source of similar information, but whether or
02:42:35 not it's better or worse than NMES kind of depends on
02:42:43 how you want to look at it; NMES is fairly focused
02:42:48 and HIS is considerably broader.
02:42:51 Q. Would you agree that the level of detail in the
02:42:55 NMES survey is greater than in the level of detail in
02:43:00 the HIS survey?
02:43:02 A. In certain areas, yes.
02:43:04 Q. In the areas of health care costs, for instance?
02:43:09 A. Yes.
02:43:10 Q. What about in the areas of information about
02:43:16 smoking?
02:43:17 A. To the extent of what the HIS does on an annual
02:43:30 basis, I don't know since the HIS changes its
02:43:33 questions from time to time or adds questions for its
02:43:37 own purposes. I don't know that there may not have
02:43:41 been similar information on smoking in the past.
02:43:46 Q. But the information you're familiar with anyway
02:43:49 on HIS is not as detailed as smoking in NMES,
02:43:55 correct?
02:43:55 A. I would say no.

02:43:58 Q. That's correct, that's not correct or no, it's
02:44:01 not as detailed?
02:44:02 A. No, it's not as detailed.
02:44:04 Q. In terms of other potential causes of the
02:44:15 diseases that are listed as the major smoking
02:44:21 attributable diseases in the Zeger, Wyant, Miller
02:44:25 report, you've mentioned today that there are other
02:44:28 potential causes of those diseases, correct?
02:44:32 A. Yes.
02:44:32 Q. And sometimes those can be called confounders
02:44:35 when one is trying to measure the effect of smoking
02:44:39 on those diseases, correct?
02:44:41 A. Correct.
02:44:41 Q. In terms of those confounders isn't it true that
02:44:47 NMES is more detailed an interview than HIS?
02:44:54 A. I don't know that.
02:44:55 Q. You don't know one way or the other?
02:44:57 A. That's correct.
02:44:58 Q. Do you know of any more of a reliable study --
02:45:12 strike that. Do you know of any study conducted in
02:45:33 the State of Minnesota that would provide more
02:45:37 reliable data for estimating smoking attributable to
02:45:44 health care costs than the data sources used by Drs.
02:45:48 Zeger, Wyant and Miller in their report?

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02:45:53 25 A. Well, other than the BRFSS which collected some

02:45:58 1 information that I recollect on smoking, no.
02:46:00 2 Q. And you understand that Drs. Zeger, Wyant and
02:46:06 3 Miller did use the BRFSS to some extent in their
02:46:12 4 work?
02:46:13 5 A. Yes.
02:46:13 6 Q. Is it also your understanding that the BRFSS did
02:46:27 7 not collect data on specific diseases anywhere near
02:46:38 8 the extent that NMES did?
02:46:40 9 A. That's correct.
02:46:40 10 Q. Is it also your understanding that the BRFSS did
02:46:46 11 not collect any data on health care costs?
02:46:49 12 A. I believe that's correct.
02:46:52 13 Q. In your opinion can the BRFSS be used together
02:47:01 14 with the Medicaid claims' data to estimate smoking
02:47:08 15 attributable to health care costs for Medicaid?
02:47:13 16 A. I don't think so, primarily because of the
02:47:19 17 things that we were talking about earlier about
02:47:22 18 smoking attribution; not having to do with those
02:47:26 19 data, but just the fact that the confounders are not
02:47:30 20 necessarily controlled for.
02:47:31 21 Q. If we try to leap to one side, the issue of
02:47:36 22 whether it's proper to say that smoking is a cause of
02:47:44 23 disease or may be a cause of disease and just look at
02:47:48 24 the quality of the data, just try to do that for a
02:47:53 25 moment, is it your opinion that the quality of the

02:47:56 1 data in BRFSS would be better suited for the type of
02:48:01 2 work that Drs. Zeger, Miller and Wyant were doing
02:48:06 3 then the quality of the NMES data?
02:48:09 4 A. No. That's not to suggest that the quality of
02:48:11 5 the NMES data was adequate to do it either.
02:48:15 6 Q. I'm just trying to find whether the relative
02:48:18 7 position between NMES and BRFSS would have a higher
02:48:25 8 quality data for this type of analysis.
02:48:28 9 A. I really wouldn't compare the two in that type
02:48:31 10 of way. I think there probably are strengths in
02:48:35 11 either system, the data within each system, and I've
02:48:41 12 never tried to compare and contrast them.
02:48:45 13 Q. Can you tell me how one would go about using
02:48:50 14 BRFSS and Minnesota Medicaid claims' data to do
02:48:58 15 something similar to what Drs. Zeger, Wyant and
02:49:00 16 Miller did without using NMES?
02:49:08 17 A. I couldn't. I haven't given it any thought.
02:49:14 18 Q. So you don't know whether it could be done or
02:49:16 19 not?
02:49:17 20 A. That's correct.
02:49:17 21 Q. Are you aware of any regional study that would
02:49:20 22 include the State of Minnesota other than NMES that
02:49:25 23 would be a better data source than NMES for the type
02:49:33 24 of work that was performed by Drs. Zeger, Wyant and
02:49:35 25 Miller?

02:49:37 1 A. I'm not aware of any, but that's not to suggest
02:49:40 2 that the study that they did was in any sense better
02:49:45 3 for the fact that I couldn't find anything better.

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02:49:49 Q. I'm just asking the question is there a better
02:49:51 data source that you know of.
02:49:53 A. Not that I know of.
02:49:54 Q. Again, if we leave aside the issue of whether
02:50:08 it's proper to attribute any percent of a disease in
02:50:16 a population to smoking with causal language in terms
02:50:23 of the quality of the data is there any more reliable
02:50:28 national data on which to try to make a national
02:50:33 estimate of smoking attributable to health care
02:50:36 costs?
02:50:37 A. Again, not that I'm aware of. However, that is
02:50:40 not to say that by having said that I feel that these
02:50:46 data are necessarily adequate to the task either.
02:50:49 Q. Again, I'm just trying to find out whether there
02:50:53 is a more reliable data set out there that you know
02:50:55 of.
02:50:56 A. Not that I'm aware.
02:50:57 Q. And you had mentioned that you had done some
02:51:04 review of SAMMEC?
02:51:08 A. That's correct.
02:51:09 Q. Can you describe SAMMEC for me?
02:51:13 A. SAMMEC is actually the basic model which

02:51:19 originally they had begun their study with to
02:51:22 estimate smoking attributable costs, and it was one
02:51:28 of three general data sources in the model that --
02:51:33 actually it wasn't the data source, it was the way
02:51:37 the data were handled using the NMES data as a
02:51:42 primary data source to come down to an estimate of
02:51:46 what they purported were smoking attributable causes.
02:51:51 Q. When you say "they," who are you referring to?
02:51:53 A. Leonard Miller.
02:51:55 Q. And this is what he did, for instance, for the
02:51:57 State of Mississippi or that was used in the State of
02:51:59 Mississippi?
02:52:00 A. It was originally done for the State of
02:52:02 Mississippi, but I don't think it was ultimately used
02:52:07 by them.
02:52:08 Q. Is NMES a more reliable data source to use for
02:52:18 these purposes than SAMMEC?
02:52:24 MR. BORMAN: I'll object to the form
02:52:26 of the question.
02:52:28 THE WITNESS: To begin with, I don't
02:52:29 think SAMMEC was as much a data source as it was a
02:52:34 methodology. And by saying that it's not a better
02:52:37 data source, I'm not implying that that in any way
02:52:41 enhances the utility of the NMES.
02:52:44 BY MR. LOVE:

02:52:44 Q. SAMMEC is based largely on mortality figures; is
02:52:50 that correct?
02:52:50 A. That's right, well morbidity and mortality
02:52:54 actually. Smoking attributed to morbidity and
02:53:02 mortality is what I recollect.
02:53:04 Q. I take it that because of your opinions on
02:53:27 attributing causal significance to smoking in
02:53:34 connection with any of these diseases that it's your
02:53:38 opinion that NMES cannot be used to estimate smoking
02:53:45 attributable health care costs on a national level?

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02:53:49 11 A. Not for that reason alone. I think that the
02:53:52 12 quality of the NMES data being predominantly national
02:53:58 13 in character because the system was not designed to
02:54:02 14 provide information that was interpretable down to
02:54:06 15 the state level, particularly to states below the ten
02:54:10 16 largest states - and Minnesota runs down around
02:54:14 17 nineteen, twenty or down in there somewhere - that
02:54:19 18 notwithstanding the fact that I don't believe you can
02:54:22 19 finally attribute certain conditions to smoking when
02:54:25 20 you manipulate those data with data that can't really
02:54:31 21 be used at a state level, in my opinion you're
02:54:35 22 compounding your error.
02:54:37 23 Q. I think you may have misunderstood my question
02:54:40 24 or perhaps I misstated it. I was stating at the
02:54:46 25 national level can you use NMES to estimate national

02:54:51 1 smoking attributable health care costs?
02:54:54 2 A. No, you can't.
02:54:56 3 Q. Why can't you do that?
02:54:58 4 A. There because of the fact that I don't believe
02:55:00 5 you can attribute the condition to the cause, a
02:55:03 6 presumptive cause.
02:55:04 7 Q. And this is the causal discussion we had earlier
02:55:07 8 today?
02:55:07 9 A. That's correct.
02:55:08 10 Q. Are there any other reasons other than that
02:55:11 11 causal discussion why you can't use NMES to estimate
02:55:15 12 national smoking attributable health care costs?
02:55:19 13 A. Well, I have some concerns over the fact that
02:55:23 14 people were asked -- it was a subset of the people
02:55:26 15 who were asked somewhere around the second or third
02:55:28 16 round of questions when the NMES was being conducted
02:55:33 17 for smoking behavior -- I don't remember the exact
02:55:39 18 questions, but I had some concerns about the
02:55:41 19 generalized ability of those data.
02:55:43 20 But by in large the principal difficulty I would
02:55:48 21 have there at the national level would be the same as
02:55:50 22 I have at the local level with respect to
02:55:53 23 attribution.
02:55:55 24 Q. The causal discussion?
02:55:56 25 A. That's right.

02:55:58 1 Q. In your expert report, Exhibit 3301, did you
02:56:03 2 describe the concern you had about the questions in
02:56:14 3 NMES relating to smoking?
02:56:15 4 A. I think so. I don't have a copy of that in
02:56:19 5 front of me. Do you have a page number?
02:56:32 6 Q. No. I'm asking you.
02:56:42 7 A. Your question again was --
02:56:44 8 Q. In your report did you discuss the concern you
02:56:48 9 just mentioned about the questions of NMES regarding
02:56:58 10 smoking?
02:57:03 11 A. I believe I did mention it in here that it
02:57:06 12 was --
02:57:10 13 Q. If you can recall anything about what you said
02:57:49 14 in the report, maybe I can help you point out where
02:57:54 15 it might be.
02:57:56 16 A. I guess I didn't put it in finally. I know I
02:57:59 17 had originally intended to mention it, but it was --

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02:58:19 18 that's the problem with doing things on the computer,
02:58:22 19 you don't have a copy you can go back to to see what
02:58:26 20 you were striking out.
02:58:27 21 I probably -- I can't find it as I glance
02:58:30 22 through this now, but I thought I had mentioned it in
02:58:34 23 at least one sentence that the smoking questionnaire
02:58:38 24 was almost like an afterthought.
02:58:46 25 Q. What concerns did that cause you?

02:58:49 1 A. Well, I'm always concerned about questions that
02:58:53 2 occur after one designs a survey that aren't applied
02:59:01 3 uniformly to a specifically designed subset of a
02:59:08 4 sample population because you worry about whether or
02:59:13 5 not it is representative of the same population than
02:59:19 6 the rest of the population represented. It was not
02:59:25 7 asked for the entire array.
02:59:27 8 Q. So is it your understanding that it was asked of
02:59:30 9 some particularly chosen subset?
02:59:34 10 A. No, not necessarily a particular chosen subset,
02:59:37 11 but as a matter of fact, that's what gave me more
02:59:41 12 concern than anything else.
02:59:43 13 My recollection is that it was given to what
02:59:46 14 remained of another sample. I would really have to
02:59:49 15 go back and look at that.
02:59:52 16 My bigger problem was the fact that the NMES was
03:00:00 17 almost like a camel designed by a committee who was
03:00:07 18 trying to create a horse; budget constraints forced
03:00:12 19 them to make concessions and break it into two
03:00:16 20 different pieces.
03:00:16 21 There is always the problem that that raises
03:00:21 22 fairness and everything else.
03:00:25 23 Q. Let me ask you to turn to page 15 of your report
03:00:29 24 with the heading NMES data. I see that one of the
03:00:33 25 things you talk about there is self reporting and --

03:00:40 1 A. Yes.
03:00:42 2 Q. I think we covered these points over are you
03:00:46 3 concerned with either self reporting or memory decay
03:00:49 4 in regard to NMES about whether a person is a smoker
03:00:55 5 or not, didn't we?
03:00:56 6 A. Yes, because my recollection was some of the
03:00:59 7 questions actually dealt with previous smoking
03:01:01 8 history, and it's not necessarily something that
03:01:05 9 someone would remember all that correctly.
03:01:06 10 But it was also a problem with respect to
03:01:09 11 certain medical conditions that people reported
03:01:14 12 themselves being treated for.
03:01:16 13 Q. If we can sort of concentrate on the smoking
03:01:19 14 aspect of it now, I think you told me earlier that if
03:01:23 15 a person had been a smoker for at least a year that
03:01:28 16 you wouldn't be so concerned about either the self
03:01:31 17 reporting or the memory decay aspect of that kind of
03:01:34 18 a question; is that correct?
03:01:35 19 A. Correct.
03:01:35 20 Q. Do you know what it cost to conduct the National
03:02:15 21 Medical Expenditure Survey in 1987?
03:02:18 22 A. I don't recall.
03:02:18 23 Q. Do you have any idea?
03:02:20 24 A. No, I just don't recall.

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03:02:22 25 Q. Now, you've said that it's not appropriate to

03:02:29 1 use that national survey to make state estimates,
03:02:32 2 correct?
03:02:33 3 A. That's correct.
03:02:36 4 Q. Do you know if it would cost significantly more
03:02:43 5 or less to conduct a state estimate, a state survey
03:02:47 6 that would provide the information you think you
03:02:51 7 need to --
03:02:54 8 A. If you were to try to do it for all fifty states
03:02:57 9 it would cost substantially more. If you were trying
03:03:01 10 to do it for an individual state it would probably
03:03:03 11 cost substantially less.
03:03:04 12 Q. Can you give me any idea of how much less on a
03:03:07 13 percentage basis?
03:03:09 14 A. No.
03:03:09 15 Q. How big a sample size would you need to have to
03:03:13 16 conduct the Minnesota survey that you think would
03:03:18 17 provide reliable data for making these smoking
03:03:23 18 attributable health care estimates leaving aside the
03:03:27 19 causation --
03:03:29 20 A. Speaking not as a statistician now, because I'm
03:03:33 21 not going to be able to sit down and calculate
03:03:36 22 everything to get the degree of precision you want, I
03:03:40 23 can say without further qualifications that I think
03:03:44 24 it would be substantially less than the thirty-four
03:03:46 25 thousand they were aiming for on the national system.

03:03:49 1 Q. That's about as much detail as you can provide
03:03:53 2 on that issue?
03:03:53 3 A. That's correct.
03:03:54 4 Q. Back on page 7 of your report you begin a
03:04:51 5 summary of opinions on that page, correct?
03:04:54 6 A. Correct.
03:04:56 7 Q. And the first bullet point I take it is your
03:05:01 8 first opinion?
03:05:02 9 A. That's correct.
03:05:02 10 Q. Now, is it your opinion that Drs. Zeger, Wyant
03:05:08 11 and Miller indiscriminately used NMES to determine
03:05:20 12 causes of health care expenditures on just any
03:05:24 13 population level?
03:05:25 14 A. I won't use the term indiscriminate with respect
03:05:29 15 to their use of it. The phrase here was in the more
03:05:32 16 general context, that you cannot take this survey and
03:05:37 17 use it indiscriminately for just any population level
03:05:45 18 below that.
03:05:45 19 Now, as to their use of it, while I might not
03:05:51 20 characterize it as indiscriminate, I might
03:05:57 21 characterize it as incorrect.
03:06:01 22 Q. Is it fair then to say that in your opinion it
03:06:05 23 was incorrect for them to use NMES data to attribute
03:06:14 24 to health care costs in the State of Minnesota?
03:06:17 25 A. That's correct.

03:06:21 1 Q. Leaving aside the causation issue we have
03:06:32 2 discussed earlier, did you have any other general
03:06:37 3 criticism of what Drs. Zeger, Wyant, Miller did

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03:06:44 4 beyond incorrectly using NMES to measure smoking
03:06:49 5 attributable health care costs in the State of
03:06:51 6 Minnesota?
03:06:53 7 A. Well, to use NMES for any estimates within the
03:06:57 8 State of Minnesota whether it was with respect to
03:07:00 9 smoking or anything else was inappropriate in my
03:07:03 10 view.
03:07:03 11 Q. I guess my question is could we sort of
03:07:06 12 summarize all of your opinions and put them into
03:07:09 13 either one or two categories, one being the causation
03:07:13 14 issue we have discussed, and the second being the
03:07:17 15 inappropriateness of using NMES at the state level?
03:07:24 16 A. You mean one or the other?
03:07:26 17 Q. Right. Of all of the opinions you express in
03:07:30 18 your report and all the criticisms you have in your
03:07:33 19 report of Drs. Zeger, Wyant and Miller that they fall
03:07:39 20 into those two broad categories?
03:07:43 21 A. They fall into both categories.
03:07:44 22 Q. Are there any others?
03:07:47 23 A. Not offhand I can't think of any.
03:08:06 24 Q. Do you have any objections to the use of NMES at
03:08:14 25 the midwest regional level?

03:08:19 1 A. Probably not within the limitations of the time
03:08:26 2 frame that it covered.
03:08:32 3 Q. Is it your opinion that NMES can only be used to
03:08:36 4 make estimates for calendar year 1987?
03:08:41 5 A. Well, that would probably be the most correct
03:08:45 6 area for it to be used, but the further you get from
03:08:48 7 the year 1987, the less likely you are to have an
03:08:53 8 accurate characterization of the population by
03:08:59 9 applying these statistics to.
03:09:01 10 Q. How far away from 1987 can you get in your
03:09:05 11 opinion?
03:09:05 12 A. I don't know how far. I really don't know how
03:09:08 13 far away I would go. Maybe three or four years in
03:09:11 14 either side.
03:09:13 15 But the State of Minnesota, like many other
03:09:15 16 states in this country, was in a constant state of
03:09:19 17 change and so you weren't really dealing with same
03:09:22 18 population very long before 1987 or very long after.
03:09:34 19 Q. Have you examined the changes in the Minnesota
03:09:37 20 population before and after 1987?
03:09:40 21 A. By examined, I'm not sure what you mean. Have I
03:09:45 22 looked at some data that are available on them before
03:09:48 23 and after 1987, yes, I have.
03:09:51 24 Q. What data did you consider to be most
03:09:57 25 significant in determining whether there were changes

03:09:59 1 in the Minnesota population before and after 1987
03:10:02 2 that would affect the type of estimate that Drs.
03:10:05 3 Zeger, Wyant and Miller were making?
03:10:08 4 A. I've got most of them outlined in here, and
03:10:12 5 showing how Minnesota differs substantially from the
03:10:15 6 nation as a whole that the -- because the NMES data
03:10:21 7 were national data, they -- if they are applied to
03:10:27 8 Minnesota, they suffer from the problem that
03:10:30 9 Minnesota with a lower net migration rate has
03:10:37 10 actually suffered several changes in the -- in its

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demographics through the years.
They have a larger number of Orientals and Russians migrating in than any place else in the nation, and whatever culture influences these people, may bring with them changes the way they might be acting within the population with respect to smoking, with respect to medical care, with respect to income and everything else. They have --
Q. When you say "net migration," what do you mean?
A. That there are more people moving in to the rest of the country than there are in Minnesota. Minnesota has a slower growth rate than the nation as a whole, so --
Q. So the population of Minnesota is growing at a slower rate than the nation as a whole; is that

correct?
A. That's correct.
Q. And that's what you mean when you say Minnesota had the lower net migration rate than the national rate; is that correct?
A. That's correct.
Q. Does it necessarily mean that the Minnesota population is changing because it's growing more slowly?
A. Well, it's changing in terms of its demographic -- demographic character. It has to begin with a much lower non-white population than the country as a whole. I think it's somewhere around two percent.
So any national data wouldn't necessarily fairly apply to the population that would relate to differences between races.
As I said, the migration in where it is predominantly Oriental and Russian as opposed to the rest of the country, largely the largest single migration inward is Hispanic.
All of these carry with them culture influences that may dramatically affect some of the measures that were taken in the NMES.
Q. Sticking with the net migration rate which as I

understand is the same thing as the growth rate, correct?
A. Mm-hmm.
Q. What data source do you have for stating that Minnesota has a lower net migration rate?
A. This was the Statistical Abstract for 1995 put out by the Bureau of Census.
Q. And over what period of time did you examine the growth rate of Minnesota?
A. I think it was 1970 through 1990. Let me go back to the -- from 1970 through 1990 Minnesota grew at a rate of sixty-two percent and seventy-six percent of the national rate respectfully for a net growth rate of fourteen percent compared to the twenty-one point two percent of the nation.
Q. Just so I understand what you're saying there, during that twenty year period Minnesota grew at the

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03:14:26 rate of sixty-two percent; is that part right?
03:14:30 A. Over the two decade period -- sixty-two percent
03:14:38 the first decade and seventy-six percent the second
03:14:41 decade.
03:14:42 Q. Are you saying that --
03:14:49 A. But it's net growth compared with what it was in
03:14:53 1970. And 1980 respectfully was fourteen and a half
03:14:58 percent, whereas the nation grew at a rate of

03:15:01 twenty-one point two percent during that same period.
03:15:04 Q. When you say that Minnesota grew at the rate of
03:15:11 sixty-two percent for the first decade, that's 1970
03:15:14 to 1980, correct?
03:15:16 A. That's right.
03:15:17 Q. Are you saying that the population in 1980 was
03:15:21 sixty-two percent more than it was in 1970?
03:15:30 A. I'm trying to remember how I computed my figures
03:15:35 here. No. It grew at sixty-two percent of the
03:15:44 national rate for that first decade.
03:15:48 The national rate in the first decade was
03:15:50 thirty-eight percent higher than Minnesota's growth
03:15:54 rate during the first decade.
03:15:55 The national rate for the second decade was
03:15:58 twenty-four percent higher than it was for the State
03:16:01 of Minnesota.
03:16:03 Q. Then what does a net growth of fourteen point
03:16:09 five percent overall mean?
03:16:10 A. From 1970 to 1980 Minnesota grew in its
03:16:15 population by fourteen and a half percent, whereas
03:16:17 the nation --
03:16:18 Q. Let me stop you right there. Does that mean
03:16:21 that in 1980 the Minnesota population was fourteen
03:16:25 and a half percent larger than it was in 1970?
03:16:27 A. No. In 1990 it was fourteen and a half percent

03:16:30 larger. We're talking about overall, the two decade
03:16:33 period now.
03:16:34 Q. Let me see if I can get it right this time. Are
03:16:37 you saying that in 1990 the Minnesota population was
03:16:41 fourteen and a half percent higher than it was in
03:16:43 1970?
03:16:46 A. That's correct.
03:16:46 Q. And you're saying that the entire United States
03:16:49 population in 1990 was twenty-one point two percent
03:16:53 greater than it had been in 1970?
03:16:56 A. That's correct.
03:16:56 Q. Does that factor standing alone have any
03:17:04 significance to you in terms of the work that Drs.
03:17:08 Zeger, Wyant and Miller were performing?
03:17:11 A. Not in and of itself. I go on to describe a
03:17:16 number of differences between the State of Minnesota
03:17:18 and the nation as a whole that would seem to make it
03:17:23 more difficult to interpolate from the national data
03:17:30 down to the state.
03:17:32 You're not dealing with same population
03:17:35 configuration.
03:17:36 Q. And then the next point you make about migration
03:17:43 rates is that in 1993 the immigrants to Minnesota
03:17:47 were predominantly from China and Vietnam or the

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03:17:52 Soviet Union; is that correct?

03:17:55 A. That's correct.
03:17:55 Q. And nationally the largest sources of
03:17:58 immigration were from Mexico?
03:18:03 A. That's correct.
03:18:04 Q. Now, have you made any analysis of how that
03:18:14 would affect the measurement of smoking related costs
03:18:27 in Minnesota versus the nation?
03:18:28 A. No. Again, it's simply designed to illustrate
03:18:32 that the population in Minnesota was considerably
03:18:35 different than the population in the United States.
03:18:38 And any time you're using population from one
03:18:41 larger area to a smaller area -- the key is to try to
03:18:44 keep the populations as representative of each other
03:18:48 as possible.
03:18:50 Q. Do you know -- that's what happened in 1993. Do
03:18:55 you know what the immigration characteristics were in
03:19:04 other years?
03:19:04 A. No, I don't. This is merely illustrative. It's
03:19:13 not analytic.
03:19:14 Q. For example, you wouldn't know in the late 1980s
03:19:18 if the migration rate would show that immigrants to
03:19:22 Minnesota were primarily from Mexico, for instance?
03:19:27 A. I doubt that it would have shown that because
03:19:29 they don't have that large of a Hispanic population.
03:19:33 Q. But you really don't know one way or the other,

03:19:36 do you?
03:19:36 A. No, I don't.
03:19:37 Q. What's the source of your 1993 national data?
03:19:41 A. All of this data is from the Statistical
03:19:45 Abstracts Data from 1995.
03:19:51 Q. And then the third thing you point out in this
03:20:01 paragraph is that the black population in Minnesota
03:20:07 is about two percent; is that what you're saying?
03:20:12 A. That's correct.
03:20:13 Q. And nationally it's about fifteen percent?
03:20:17 A. That's correct.
03:20:17 Q. How would that factor affect the measurement of
03:20:20 health care costs?
03:20:21 A. That might relate to it in terms of urban, poor,
03:20:30 in terms of culture differences between blacks and
03:20:32 whites and in terms of both smoking and in terms of
03:20:36 health care.
03:20:37 Again, it's another basic difference of the
03:20:40 demographics of the population to illustrate that
03:20:43 Minnesota was not the microcosm of the United States
03:20:47 population.
03:20:47 Q. If you'll look at page 9 of your report, Exhibit
03:21:11 3301, the first bullet point there states that many
03:21:28 of the above factors were not measured in the NMES
03:21:31 and Minnesota surveys; is that correct?

03:21:33 A. That's correct.
03:21:33 Q. Were race -- was race one of the factors that
03:21:45 was measured in NMES?

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03:21:47 A. I'm sorry?
03:21:50 Q. Was race one of the factors that was measured in
03:21:53 NMES?
03:21:53 A. I think they probably did get a race.
03:21:56 Q. Was race one of the factors that was controlled
03:21:59 for or stratified for in the work that Drs. Miller,
03:22:02 Zeger and Wyant performed?
03:22:07 A. Mm-hmm.
03:22:07 Q. What extent does the fact that NMES measured
03:22:11 race and these experts controlled for race in their
03:22:15 work have on your observation that Minnesota is
03:22:19 different in that respect?
03:22:20 A. Not particularly helpful because, again, we were
03:22:24 still dealing with a national population that could
03:22:26 not be projected down onto a smaller sub-population.
03:22:32 Q. Does it make any difference at all that race was
03:22:36 controlled for or stratified for in the work?
03:22:40 A. No, I really don't think so because the analysis
03:22:44 in those data which were national really doesn't
03:22:49 apply to the State of Minnesota.
03:22:50 Q. What is the significance of your first bullet
03:22:58 point on page 9 that many of the above factors were

03:23:03 not measured --
03:23:05 A. That it merely adds insult to injury; that
03:23:09 you've already got a system that you cannot project
03:23:12 downward from the national level to the local level.
03:23:15 And at the local level itself, even if it were a
03:23:20 microcosm of the United States, it hadn't even --
03:23:27 couldn't even be a suitable surrogate for the
03:23:31 national data to be applied to.
03:23:34 Q. How does collecting the data or not collecting
03:23:38 the data affect your opinion whether NMES measured
03:23:42 the race or didn't measure race?
03:23:45 A. What I'm suggesting here is even if the data
03:23:48 were extrapolated down to the national level --
03:23:51 Q. Down to the state level?
03:23:52 A. Down to the state level rather. If they didn't
03:23:56 collect data on all of these factors, they were at a
03:23:59 grave risk of applying it to an inappropriate
03:24:02 population, a population that was substantially
03:24:05 different in a way that may have affected the way
03:24:08 people would have perceived -- received medical care,
03:24:14 smoked, treated many things that would relate to
03:24:18 diseases that are under scrutiny.
03:24:21 Q. Do you know if NMES measured ethnicity?
03:24:26 A. There was a general attempt, but again, it -- I
03:24:32 wasn't trying to point out that they didn't measure

03:24:35 any of these factors. I said they didn't measure
03:24:39 many of these measurements.
03:24:41 Q. I'm just trying to get your understanding of
03:24:44 what --
03:24:44 A. I would have to go back and look at NMES to see
03:24:48 what all was measured.
03:24:50 Q. At the time you wrote your report did you check
03:24:52 to see which of these various factors on pages 7, 8
03:24:54 and 9 had been measured by NMES or by the
03:25:00 Minnesota --

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03:25:01 11 A. They would have been on the brief handwritten
03:25:04 12 notes that I told you I would have been working on
03:25:07 13 when I was first working on the computer.
03:25:10 14 Once I got it on the computer I would have
03:25:13 15 destroyed those.
03:25:14 16 Q. Did you find any significance in writing your
03:25:22 17 report to the fact that some of those factors were
03:25:25 18 measured and some of those factors were not measured
03:25:27 19 in NMES in the Minnesota surveys?
03:25:30 20 A. I'm not sure what you mean, did I find any
03:25:33 21 significance, except for the point I make is that
03:25:36 22 many and several factors were not.
03:25:38 23 Q. How, if at all, did that influence your
03:25:41 24 opinions?
03:25:41 25 A. That it's one more reason why NMES was not a

03:25:46 1 reasonable surrogate to use for the state data.
03:25:49 2 Q. Because some of the measures were not measured
03:25:52 3 in NMES?
03:25:53 4 A. That's correct.
03:25:53 5 Q. But you can't recall which factors were not
03:25:56 6 measured?
03:25:57 7 A. Not offhand.
03:26:09 8 Q. When you said about examining and comparing
03:26:17 9 Minnesota to the nation, did you come up with a list
03:26:21 10 of the most important factors to compare them on?
03:26:23 11 A. No, I didn't.
03:26:24 12 Q. Did you look for factors in which Minnesota was
03:26:36 13 similar to the nation as a whole?
03:26:37 14 A. Yes, more or less. I didn't bother listing them
03:26:43 15 because anything that's not listed here they were
03:26:45 16 probably pretty close to the U.S. total.
03:26:49 17 Q. That was the way you went about putting your
03:26:52 18 report together?
03:26:53 19 A. That's right.
03:26:53 20 Q. Do you have an opinion today as to which factors
03:26:56 21 are the most significant in comparing Minnesota to
03:26:59 22 the United States for the purpose of your analysis?
03:27:02 23 A. This is not really an analysis, this is just a
03:27:06 24 statement of what the differences are between
03:27:09 25 Minnesota and the United States based upon the census

03:27:13 1 data.
03:27:14 2 Q. My question is in connection with your opinion
03:27:22 3 that Minnesota is significantly different from the
03:27:30 4 nation, different enough that you don't believe you
03:27:33 5 could use national data from NMES to say anything at
03:27:38 6 all about Minnesota.
03:27:38 7 Do you have an opinion today as to what factors
03:27:41 8 would be important ones to check as to see what is --
03:27:47 9 what would be the five most important factors that we
03:27:50 10 would check?
03:27:52 11 A. I don't know the five most important, but I'll
03:27:54 12 read the ones I think would be most relevant that I
03:27:58 13 would want to check further on.
03:27:59 14 Q. Are you not able to answer my question about
03:28:02 15 what the five most important factors are?
03:28:05 16 A. Give me a moment and I'll see if there are five
03:28:08 17 or ten.

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03:28:09 18 Q. I'm not asking you to limit the factors you've
03:28:12 19 listed in your report, but just any factor that
03:28:16 20 should be looked at --
03:28:18 21 A. There are many factors that should be looked at;
03:28:20 22 degree of morbidity, how many people are living in
03:28:25 23 urban as opposed to rural.
03:28:26 24 Q. That would be one of the most --
03:28:28 25 A. That would be one of the important factors.

03:28:31 1 Q. Why is that important?
03:28:32 2 A. Because there is a higher disease rate normally
03:28:37 3 found in population centers that are dense than there
03:28:41 4 are in population centers that are sparse.
03:28:44 5 This is probably closer to a function of air
03:28:48 6 pollution and lifestyle and smoking habits than
03:28:52 7 anything else.
03:28:53 8 It may differ from state to state. For example,
03:28:56 9 in the State of Mississippi rural people tend to
03:29:00 10 smoke more often. I don't know if that's the case in
03:29:03 11 Minnesota or not.
03:29:04 12 I would be very interested in taking a closer
03:29:09 13 look at the death rates for heart disease, cancer and
03:29:13 14 COPD because they're lower in Minnesota than they are
03:29:16 15 in the nation as a whole.
03:29:18 16 When you're comparing presumptive causes for
03:29:22 17 these conditions at the national level with the State
03:29:25 18 of Minnesota, you would want to make sure that when
03:29:28 19 you're projecting that data down on the State of
03:29:32 20 Minnesota you're not overstating the number of
03:29:36 21 conditions suffered in the State of Minnesota.
03:29:39 22 Q. Dr. Verhalen, would it be more important to look
03:29:43 23 at the death rates for those diseases or the
03:29:46 24 incidence rate of those diseases in Minnesota versus
03:29:49 25 the nation?

03:29:50 1 A. Actually both. What you really want is the
03:29:53 2 prevalence and the death rates.
03:29:55 3 Q. Did you look at the prevalence rates for those
03:30:01 4 diseases in Minnesota and the nation?
03:30:02 5 A. I'm sorry?
03:30:04 6 Q. Did you look for the prevalence rates of those
03:30:07 7 diseases in Minnesota and the nation?
03:30:08 8 A. In the data I had available at hand when I was
03:30:11 9 putting this together, yes, I did.
03:30:13 10 Q. Did you find any significant difference between
03:30:16 11 Minnesota and the nation?
03:30:17 12 A. The death rates for heart disease, cancer and
03:30:20 13 chronic pulmonary -- chronic obstructive pulmonary
03:30:26 14 disease were far lower than the nation.
03:30:28 15 Q. Did you find any difference in the prevalence of
03:30:30 16 the disease rate rather than the prevalence of the
03:30:33 17 death rate?
03:30:34 18 A. I don't recall offhand, but I didn't have
03:30:37 19 prevalence rates for the nation in the statistics I
03:30:41 20 was looking at.
03:30:42 21 I was looking at the Statistical Abstract which
03:30:45 22 gave death rates, not disease rates.
03:30:47 23 Q. Have you ever compared Minnesota to the nation
03:30:50 24 in terms of the prevalence of these diseases?

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03:30:53 25 A. Not yet. These are the kinds of things that I

03:30:56 1 would presume to do when opportunity presents itself
03:30:59 2 when I get into this, but that was not my intent. I
03:31:03 3 wasn't trying to do this as --
03:31:08 4 Q. Again, the fact that what Drs. Zeger, Wyant and
03:31:11 5 Miller are measuring are the health care costs of
03:31:20 6 diseases wouldn't it be significant to determine
03:31:24 7 whether Minnesota is like or unlike the nation to
03:31:28 8 compare the disease rates?
03:31:30 9 A. It would be ultimately if you were dealing with
03:31:33 10 something that I believe you could actually be
03:31:35 11 measuring, but as I pointed out, they're dealing with
03:31:39 12 something where they're trying to give attribution to
03:31:42 13 these diseases to the fact that people have been
03:31:45 14 smoking or not smoking, and I maintain that that in
03:31:49 15 and of itself invalidates the approach.
03:31:52 16 So it seems a little bit foolish to me to be
03:31:56 17 going on to this other piece when in my own mind the
03:31:59 18 whole approach is invalid.
03:32:01 19 Q. I understand you have your causation objection
03:32:05 20 to the entire approach, but you did in your report go
03:32:08 21 on to look at the similarities and differences,
03:32:11 22 really the differences, between Minnesota and the
03:32:15 23 nation, and I would just like to find out what would
03:32:17 24 be the important factors to look at.
03:32:19 25 And my question is whether or not the disease

03:32:21 1 rates for those diseases in Minnesota and the nation
03:32:24 2 would be an important factor to look at in checking
03:32:27 3 the similarities and differences.
03:32:29 4 A. And I believe my answer to that was yes, they
03:32:33 5 are.
03:32:33 6 Q. What else would you put on the list of five or
03:32:39 7 ten most important factors to check in comparing
03:32:43 8 Minnesota to the nation?
03:32:44 9 A. I think the educational level of Minnesotans,
03:32:48 10 whether or not they are a reasonable reflection of
03:32:53 11 what exists nationally.
03:32:56 12 Again, if you're going to use national data to
03:32:59 13 project on the state, you want to make sure you look
03:33:02 14 at people who are similar in terms of education,
03:33:06 15 income and other exposures.
03:33:09 16 Ideally if you could get occupation sources, and
03:33:12 17 I haven't found a source to go into that yet, it
03:33:15 18 would be worth looking at.
03:33:17 19 I would like to have more information on the
03:33:19 20 environment in Minnesota if I were going to be doing
03:33:22 21 this kind of work to determine whether Minnesota has
03:33:25 22 a higher or lesser or similar degree of exposure to
03:33:29 23 other potential causes of cancer such as pesticides,
03:33:34 24 such as air pollution, such as water pollution and --
03:33:44 25 Q. What data would you look at to draw that

03:33:47 1 comparison?
03:33:48 2 A. I'm not sure where I would go to get many of
03:33:50 3 that data, but many of them I would probably go to

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03:33:54 either the National Center for Health Statistics, who
03:33:59 may or may not have such information on this, I would
03:34:03 go to the Environmental Protection Agency to get
03:34:07 information on it, I would go to the Department of
03:34:09 Energy to name three.
03:34:15 Q. What else would you put a list of of the most
03:34:17 important factors to look at in comparing Minnesota
03:34:21 to the nation?
03:34:25 A. I think we have probably got the majority of
03:34:31 what I would consider most important among the things
03:34:35 I just listed.
03:34:36 Q. Would it be important to compare the smoking
03:34:39 rates of Minnesota to the nation?
03:34:41 A. Well, I think that's one of the things that is
03:34:47 axiomatic to doing this kind of analysis if you're
03:34:50 going to accept the fact that the smoking rates are,
03:34:53 in fact, causal, but I don't consider the data that
03:34:57 are currently available causal.
03:35:00 But, yes, I would want to compare the smoking
03:35:02 rates in Minnesota to the smoking rates in the nation
03:35:06 as a whole.
03:35:06 Q. When you're saying "that is axiomatic," are you

03:35:10 suggesting that would be the most important factor?
03:35:12 A. Not necessarily, not if you project the notion
03:35:16 that you can get at smoking attribution for these
03:35:19 diseases by not controlling -- that you cannot get
03:35:23 attribution for these conditions by not controlling
03:35:26 for those other exposures.
03:35:28 Q. If you accept that then I think as you pointed
03:35:30 out there is not really a point to do this
03:35:34 comparison, is there?
03:35:35 A. That's probably true. You asked me if I were to
03:35:38 make the comparison what would I consider worth
03:35:41 looking at.
03:35:41 Q. And my question was would smoking be the most
03:35:46 important comparison factor between Minnesota and the
03:35:49 nation, smoking rates?
03:35:50 A. Well, if you premise that question on the fact
03:35:55 that you would be able to attribute these conditions
03:35:58 to smoking, yes, it probably would be. But I don't
03:36:03 take that premise.
03:36:04 Q. I understand you don't. Did you look at the
03:36:06 smoking rates in Minnesota versus the smoking rates
03:36:09 in the nation?
03:36:10 A. No.
03:36:10 Q. Why not?
03:36:11 A. I didn't have the data.

03:36:12 Q. Did you see that there was data on that in the
03:36:18 expert report of Drs. Zeger, Wyant and Miller,
03:36:22 Exhibit 2321?
03:36:23 A. I probably did, but when I was putting this
03:36:26 together I was putting together all the data I could
03:36:29 at hand, and that data I didn't have at hand.
03:36:32 Q. You didn't have that expert report at hand?
03:36:35 A. I probably did, but the notes I was making, that
03:36:38 wouldn't have been on them. Apparently not.
03:36:40 Q. Let me refer you to page 14 of Exhibit 2321,

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03:36:57 table number 3, comparing Minnesota smoking rates to
03:37:00 those in the U.S.
03:37:11 A. Right. Twenty-five point one percent as opposed
03:37:15 to twenty-eight percent.
03:37:17 Q. What if anything of significance do you find in
03:37:22 those figures?
03:37:23 A. I'd say they look to be -- I would say just on
03:37:27 the surface of it they don't look to be particularly
03:37:32 different.
03:37:32 They -- without subjecting them to a statistical
03:37:36 test I can't tell you whether or not they are
03:37:38 different.
03:37:38 Q. Did you subject any of the comparisons of
03:37:42 Minnesota and the nation that you listed in your
03:37:45 expert report to statistical analysis?

03:37:47 A. No.
03:37:48 Q. Why not?
03:37:48 A. Because I didn't have full data. All I had was
03:37:53 data points, individual data points for two, three,
03:37:56 four years, whatever, or four decades.
03:37:59 You can't subject those to a statistical
03:38:02 analysis because you really need continuous data so
03:38:05 that you can do a proper analysis.
03:38:08 But where data were considerably different from
03:38:11 one another on the surface of it, one could make a
03:38:15 general statement that two percent of the population
03:38:18 being black is very likely, statistically
03:38:21 significant, compared to fifteen percent overall for
03:38:26 the nation.
03:38:27 Q. Do you know if data exists that would allow you
03:38:28 to make a statistical comparison?
03:38:31 A. I'm sure they do.
03:38:33 Q. Did you make any effort to find such data?
03:38:36 A. I haven't had time, no.
03:38:37 Q. Do you plan to do that?
03:38:39 A. Not necessarily.
03:38:40 Q. Would overweight or the comparison to height and
03:39:15 weight be a significant factor to use in comparing
03:39:20 Minnesota to the nation?
03:39:21 A. It could be from the standpoint of certain

03:39:25 conditions such as coronary heart disease.
03:39:27 Q. For the types of diseases that are referred to
03:39:31 in the reports of Drs. Zeger, Wyant and Miller would
03:39:37 that be an important comparison?
03:39:38 A. It could be.
03:39:39 Q. Did you make any effort to compare Minnesota to
03:39:42 the nation in that regard?
03:39:43 A. No, I didn't.
03:39:44 Q. Would you consider seat belt use to be an
03:39:51 important basis of the comparison to Minnesota and
03:39:54 the United States in the context of the Zeger, Wyant,
03:39:57 Miller report?
03:39:59 A. No, because I believe that relates to risk
03:40:02 taking behavior and not -- that I don't think is a
03:40:06 reasonable -- that would be risk -- reasonable
03:40:13 surrogate. I don't believe it's a reasonable
03:40:16 surrogate.

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03:40:17 Q. Do you believe that there is a reasonable
03:40:19 surrogate for this type of behavior?
03:40:22 A. There may be. I haven't given it much thought
03:40:26 what it would be.
03:40:36 Q. Would it be significant to compare the relative
03:40:44 rates of mortality between smokers and non-smokers in
03:40:47 the nation versus Minnesota?
03:40:52 A. The relative rate for smoking?

03:40:55 Q. The relative rates of mortality between smokers
03:40:58 and non-smokers.
03:41:02 A. It could be.
03:41:04 Q. Would that be more significant than just
03:41:08 comparing the basic mortality rates?
03:41:10 A. In terms of smoking association to these
03:41:16 conditions, yes.
03:41:17 Q. And that is what Drs. Zeger, Wyant and Miller
03:41:22 were trying to measure, correct?
03:41:25 A. No. They were trying to measuring attribution,
03:41:28 not association.
03:41:29 Q. Even if you're trying to measure -- if they were
03:41:33 trying to measure association, then those relative
03:41:38 rates would be important to look at, wouldn't they?
03:41:39 A. Sure.
03:41:40 Q. Did you look at the relative rates?
03:41:42 A. No, I didn't.
03:41:48 Q. So is it fair to say that we could add smoking
03:41:53 rates, the overweight comparison and these relative
03:41:58 mortality rates to our list of important factors to
03:42:02 consider in comparing Minnesota to the nation?
03:42:04 A. Probably so.
03:42:05 Q. And with those additions have we now got a list
03:42:11 of what you consider to be the most significant
03:42:13 factors to use in comparing Minnesota to the nation

03:42:15 for the type of purpose that Drs. Wyant, Miller and
03:42:17 Zeger were --
03:42:19 A. I don't think it's necessarily exhaustive, no.
03:42:23 Neither did my report list these as the most
03:42:26 important items to be looking at.
03:42:28 They were a report on in what ways Minnesota
03:42:32 differed from the nation as a whole demographically
03:42:35 according to Census Bureau statistics as published in
03:42:41 the 1995 Statistical Abstract.
03:42:43 Q. Can you think of any other factors that you
03:42:47 would consider to be as important as the ones we have
03:42:50 listed, the smoking rates, the overweight, the
03:42:54 relative mortality rates, the disease rates? There
03:43:00 were a couple others that you mentioned.
03:43:03 A. Not offhand.
03:43:04 Q. If you examined all of those rates that are on
03:43:13 our list of the most important ones and found that
03:43:16 Minnesota was quite similar to the nation would that
03:43:19 change your opinion about using NMES data in
03:43:23 Minnesota?
03:43:24 A. No, because you're still not necessarily dealing
03:43:28 with same population. You're simply dealing with a
03:43:33 population that may have similar characterizations in
03:43:36 terms of disease.

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03:43:37 If the population turned out to be substantially

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03:43:40 different, then you would want to suspect that there
03:43:42 may be more or less influence on some of these
03:43:45 characterizations on the occurrences of disease.
03:43:49 But, again, you wouldn't know that definitively;
03:43:54 you may know there are pointers of influences by
03:43:59 these characterizations instead.
03:44:01 Q. If all of those factors on our list of most
03:44:06 important factors showed strong similarity between
03:44:13 Minnesota and the nation, and all the differences
03:44:17 that you list in your report did not exist - in fact,
03:44:23 on those characterizations Minnesota was also similar
03:44:26 to the nation - would that influence your opinion
03:44:29 about whether it would be fair to use NMES data to
03:44:32 make estimates in Minnesota?
03:44:34 A. Not really. Again, that could simply be
03:44:37 happenstance more than a result of statistical
03:44:41 sufficiency.
03:44:42 The fact of the matter is the NMES was designed
03:44:46 as a national survey. The state is the nineteenth,
03:44:52 twentieth or twenty first largest in the country.
03:44:56 At the very most you could project downwards
03:44:59 into states reliably to the top five or ten states.
03:45:04 Q. By direct estimation or something else?
03:45:08 A. By direct estimation or any synthetic
03:45:13 estimation, direct estimation being one of those.

03:45:16 Q. Do you characterize synthetic to direct
03:45:25 estimates --
03:45:25 A. I think any time you're comparing something to a
03:45:28 large population you're estimating synthetic process.
03:45:36 Q. Is it fair to say then regardless of how many
03:45:40 factors we find similarity in between Minnesota and
03:45:43 the nation or how few factors we find similarity in,
03:45:47 that your opinion remains that you can't use NMES to
03:45:51 make estimates in Minnesota?
03:45:53 A. That's correct.
03:46:16 Q. Back on page 7 of your report, the summary of
03:46:19 opinions, the second bullet point, I take it that is
03:46:26 your second opinion; is that correct?
03:46:28 A. Yeah, it's less of an opinion than a statement
03:46:38 of fact.
03:46:43 Q. You understand that Drs. Zeger, Wyant and Miller
03:46:49 use NMES for the non-institutionalized portion of
03:46:55 their work, and not for the institutionalized portion
03:46:58 of their work, correct?
03:47:00 A. Yes.
03:47:00 Q. And at least in that respect it's an appropriate
03:47:04 comparison, non-institutionalized to
03:47:11 institutionalized, appropriate in the sense that they
03:47:15 weren't comparing institutionalized population to a
03:47:19 non-institutionalized population.

03:47:22 A. That's not the problem.
03:48:03 Q. Would it also be important in comparing
03:48:07 Minnesota to the nation to look at expenditures to

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03:48:13 4 see whether Minnesota's Medicaid expenditure is
03:48:23 5 similar in some fashion to national Medicaid
03:48:28 6 expenditures?
03:48:31 7 A. It might be appropriate, yeah.
03:48:33 8 Q. If you can again look at the report of Drs.
03:48:40 9 Zeger, Wyant and Miller, Exhibit 2321. I'll try and
03:48:46 10 see if I can find a page for you. It's called chart
03:48:51 11 4 which I think is part of Attachment C. Do you
03:49:09 12 recall reviewing that chart?
03:49:11 13 A. Yeah, I remember seeing that.
03:49:13 14 Q. What if anything did that chart indicate to you
03:49:22 15 in terms of comparing Minnesota to the nation?
03:49:24 16 A. That their expenditures are pretty close to the
03:49:28 17 expenditures in the nation by category of
03:49:31 18 expenditure.
03:49:31 19 Q. Would that be one of the factors that we would
03:49:44 20 put on this list of the most factors to compare
03:49:47 21 Minnesota to the nation on?
03:49:49 22 A. It would be on the list of important factors to
03:49:51 23 look at, yeah.
03:49:53 24 MR. LOVE: Let's take a break here.
03:50:10 25 (Recess taken.)

03:50:10 1 BY MR. LOVE:
03:50:10 2 Q. Dr. Verhalen, with respect to the net migration
03:50:28 3 rate which is really the growth rate difference that
03:50:33 4 you've found between Minnesota and the nation do you
03:50:36 5 have an opinion as to whether the difference in
03:50:42 6 growth rate of fourteen point five percent in
03:50:43 7 Minnesota versus twenty-one point two percent in the
03:50:46 8 nation is significant?
03:50:49 9 A. No, I don't.
03:50:50 10 Q. Do you have any opinion as to whether the
03:50:57 11 information that you provided on page 21 of your
03:51:00 12 report about the sources of immigration to Minnesota
03:51:07 13 versus the nation in 1993 is significant?
03:51:11 14 A. I don't know that it's significant by actual
03:51:14 15 test, but I think on the surface of it it appears to
03:51:17 16 be significant.
03:51:18 17 Q. So in your opinion it's significant?
03:51:21 18 A. Yes.
03:51:21 19 Q. Do you know if the Surgeon General has ever
03:51:30 20 attributed any significance to migration rates or
03:51:39 21 population growth rates in connection with his
03:51:44 22 studies and conclusions on smoking and disease?
03:51:47 23 A. No, I don't think he has.
03:51:51 24 Q. Is that something you think the Surgeon General
03:51:54 25 should have considered?

03:51:55 1 A. Not necessarily.
03:51:56 2 Q. Do you believe that any changes in the growth
03:52:05 3 rate or migration rate would affect the way in which
03:52:10 4 the calculations should be performed in the work that
03:52:15 5 was done by Drs. Zeger, Wyant and Miller?
03:52:19 6 A. Not necessarily.
03:52:22 7 Q. Are there some situations in which they should
03:52:28 8 affect those calculations?
03:52:30 9 A. The migration rate?
03:52:31 10 Q. Yes.

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03:52:32 11 A. By type of person it very well could. If it
03:52:36 12 were predominantly migration inward or outward of
03:52:41 13 some particular ethnic group which changed the
03:52:45 14 culture configuration of the state, it very well
03:52:50 15 could have an influence.
03:52:52 16 Again, that was not pointed out because it was
03:52:55 17 particularly significant, it was pointed out because
03:52:58 18 it was the difference between the state and the
03:53:01 19 nation.
03:53:08 20 Q. We talked also about a difference you found
03:53:12 21 between the percentage of the population living in
03:53:16 22 urban areas versus I guess you would say rural areas;
03:53:19 23 is that correct.
03:53:19 24 A. Yes.
03:53:20 25 Q. Are you aware of any significance the Surgeon

03:53:28 1 General has ever mentioned in connection with his
03:53:33 2 work in conclusions on smoking and disease related to
03:53:40 3 living in urban areas versus rural areas?
03:53:43 4 A. No.
03:53:44 5 Q. Is that something you think the Surgeon General
03:53:46 6 should have discussed or investigated?
03:53:48 7 A. He very well should have -- could have.
03:53:53 8 Q. Could have or should have?
03:53:54 9 A. He very well might have found it useful to have
03:53:59 10 done so.
03:53:59 11 Q. Are you aware of any reports or articles by
03:54:04 12 anyone else that addresses that issue?
03:54:07 13 A. Not just off the top of my head, no.
03:54:10 14 Q. You don't recall reading any and doing any work
03:54:13 15 on any of these tobacco cases?
03:54:16 16 A. Not with respect to the tobacco cases, but I
03:54:20 17 read a lot of reports, and this is one of the things
03:54:22 18 that stuck in my mind as being associated with
03:54:26 19 smoking relevant behavior, the urban culture as
03:54:31 20 opposed to rural culture, occupation and stress.
03:54:38 21 Q. Is there any difference in living in urban areas
03:54:43 22 versus rural areas between Minnesota and the nation
03:54:53 23 that would affect the calculation for --
03:54:54 24 A. Conceivably it could as a function of air
03:54:58 25 pollution in urban areas as opposed to rural areas.

03:55:02 1 Noting that your air is fairly clear here, it
03:55:06 2 nevertheless is not as clear in the city as it would
03:55:10 3 be outside of the city and could conceivably affect,
03:55:14 4 for example, lung cancer rates or other cancer rates.
03:55:18 5 Q. Would that require them to perform a different
03:55:21 6 type of calculation than what they performed?
03:55:24 7 A. Not necessarily.
03:55:25 8 Q. It might just change the results of the
03:55:27 9 calculation; is that right?
03:55:28 10 A. They might add in another calculation that deals
03:55:33 11 with whatever measure they could have on the urban
03:55:37 12 effect.
03:55:37 13 Q. Are you suggesting that they ought to control
03:55:40 14 for that factor in their calculations?
03:55:43 15 A. Very possibly, yes.
03:55:44 16 Q. Does that mean that they should control for that
03:55:52 17 or they shouldn't control for that factor or you

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03:55:58 18 can't tell one way or the other?
03:55:59 19 A. I can't tell one way or the other.
03:56:00 20 Q. A third difference you mention is that the
03:56:05 21 household size decreased faster in Minnesota than the
03:56:15 22 nation as a whole between 1980 and 1990, correct?
03:56:19 23 A. That's correct.
03:56:20 24 Q. Did you look at household size between 1970 and
03:56:25 25 1980?

03:56:26 1 A. No, I didn't have those data.
03:56:28 2 Q. So the Census Bureau data that you had for '70
03:56:35 3 to '90 didn't show household size for the first
03:56:39 4 decade?
03:56:39 5 A. That's correct.
03:56:40 6 Q. That's just a question that wasn't asked at that
03:56:43 7 time?
03:56:43 8 A. I'm not sure or if it simply wasn't reported in
03:56:49 9 the Statistical Abstract.
03:56:50 10 Q. Is it your understanding that the estimates that
03:56:53 11 Drs. Zeger, Wyant and Miller prepared were done on a
03:56:58 12 household basis?
03:56:58 13 A. No.
03:56:59 14 Q. Has the Surgeon General ever discussed household
03:57:16 15 size as a factor that has bearing on the relationship
03:57:21 16 between smoking and disease?
03:57:22 17 A. Not that I recall.
03:57:24 18 Q. Have you reviewed any articles or reports by
03:57:26 19 anybody else that discussed household size as a
03:57:29 20 factor in the relationship between smoking and
03:57:32 21 disease?
03:57:32 22 A. Not that I recall seeing, no.
03:57:34 23 Q. In what way do you think, if any, household size
03:57:45 24 is a factor in the relationship between smoking and
03:57:49 25 disease?

03:57:49 1 A. I'm not sure, but if I saw substantial
03:57:52 2 differences between two populations in household
03:57:56 3 size, and I had cigarette smoking behavior on that
03:58:01 4 same population, I might look at whether or not there
03:58:05 5 are differences. There very well may be.
03:58:07 6 Q. The difference that you found in household size
03:58:11 7 between 1980 and 1990 on page 21 of your report, in
03:58:21 8 your opinion was that difference significant?
03:58:25 9 A. I don't know. It was another difference.
03:58:35 10 Q. You found that household size decreased in
03:58:40 11 Minnesota and the nation, correct?
03:58:41 12 A. I'm sorry?
03:58:42 13 Q. You found that household size decreased in
03:58:54 14 Minnesota and the nation?
03:58:54 15 A. Yes.
03:58:55 16 Q. Did it decrease faster in Minnesota?
03:59:00 17 A. No, no, slower than in Minnesota.
03:59:03 18 Q. It decreased faster in Minnesota than in the
03:59:07 19 U.S?
03:59:08 20 A. That's correct.
03:59:08 21 Q. Do you know if household size is a factor that
03:59:23 22 was measured in NMES?
03:59:28 23 A. Pardon?
03:59:29 24 Q. Do you know if household size was a factor that

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03:59:32 25 was measured in NMES?

03:59:34 1 A. I don't recall.
03:59:34 2 Q. We discussed your findings about the overall
03:59:58 3 death rate in Minnesota versus the U.S. somewhat
04:00:01 4 today. In your opinion is the difference that you
04:00:05 5 found significant?
04:00:06 6 A. I don't know.
04:00:07 7 Q. You also found a difference in the death rates
04:00:21 8 for heart disease, cancer and COPD being lower in
04:00:27 9 Minnesota than the nation, correct?
04:00:29 10 A. That's correct.
04:00:29 11 Q. In your opinion are those differences
04:00:31 12 significant?
04:00:33 13 A. Heart disease rate may be, the fact that it's
04:00:39 14 eighteen percent lower in 1992 and that was only one
04:00:42 15 year for which they had the data.
04:00:47 16 I'm less that the cancer and COPD at six percent
04:00:52 17 and seven percent respectively were necessarily
04:00:54 18 significant.
04:00:55 19 But, again, the fact that they were consistently
04:00:58 20 below the national rate --
04:00:59 21 Q. When you say "consistently," you only looked at
04:01:02 22 one year, didn't you?
04:01:03 23 A. I'm sorry. The overall death rate was
04:01:06 24 consistent. I'm sorry. I didn't mean to imply that
04:01:13 25 these individual death rates were consistently below.

04:01:18 1 Q. Meaning the death rates for particular diseases?
04:01:21 2 A. That's correct.
04:01:22 3 Q. Was there no data for years other than 1992 in
04:01:28 4 the Census Bureau of information that you looked at
04:01:32 5 on these death rates for these diseases?
04:01:34 6 A. I don't recall what other years there were.
04:01:38 7 1992 might have been the last date for which they had
04:01:41 8 because the data are abstracted from the general
04:01:46 9 reports.
04:01:46 10 Q. Do you believe that there might have been data
04:01:50 11 for years prior to 1992 in the death rates for these
04:01:55 12 diseases?
04:01:55 13 A. I don't think so or I would have said something
04:01:58 14 about it.
04:01:58 15 Q. This is the abstract, the 1995 abstract?
04:02:11 16 A. The 1995 Statistical Abstract.
04:02:15 17 Q. And you found Minnesota had a higher death rate
04:02:19 18 for cerebrovascular disease and atherosclerosis?
04:02:28 19 A. That's correct.
04:02:28 20 Q. In your opinion are those statistics
04:02:33 21 significant?
04:02:34 22 A. They might be. I don't know.
04:02:35 23 Q. Am I correct in interpreting your report that
04:02:39 24 the difference for cerebrovascular disease for 1992
04:02:44 25 and the difference for atherosclerosis was for 1991?

04:02:54 1 A. Yes.
04:02:54 2 Q. Do you have any idea why one was reported for
04:02:58 3 one year and the one was reported for another year?

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04:03:01 A. No. Sometimes in a Statistical Abstract they
04:03:04 would have different years because those are the last
04:03:07 years they may have had data on.
04:03:09 There may have been abstracts for both diseases
04:03:15 in '92, but I don't think so.
04:03:40 Q. Has the Surgeon General stated that overall
04:03:47 death rates as opposed to relative death rates are
04:03:50 significant in analyzing the relationship between
04:03:57 smoking and disease?
04:03:59 A. I'm sorry. I didn't understand the question.
04:04:01 Q. Has the Surgeon General stated that overall
04:04:05 death rates as opposed to relative death rates are
04:04:09 significant in understanding the relationship between
04:04:13 smoking and disease?
04:04:14 A. Yes.
04:04:15 Q. Has he also stated that the relative death rates
04:04:23 are significant?
04:04:25 A. He has stated that, yes.
04:04:26 Q. I noticed on page 8 of your report there is an
04:04:50 arrow - I guess I would call it several arrow points
04:04:55 there - for differences that you found.
04:04:57 The arrow point that talks about death rates for

04:05:01 heart disease, cancer and COPD being lower in
04:05:05 Minnesota doesn't also refer to the higher death rate
04:05:08 in Minnesota for cerebrovascular disease and
04:05:15 atherosclerosis. Is there any reason to that?
04:05:20 A. I'm not sure I get the gist of your question.
04:05:23 Q. In something on your report you talked about
04:05:27 Minnesota having a lower death rate for heart
04:05:30 disease, cancer and COPD than the nation, correct?
04:05:37 A. That's correct.
04:05:38 Q. You also talked about Minnesota having a higher
04:05:40 death rate for cerebrovascular disease and
04:05:49 atherosclerosis, correct?
04:05:50 A. Correct.
04:05:51 Q. On page 8 of your report I don't see any
04:05:55 reference to the cerebrovascular disease and
04:05:58 atherosclerosis. My question is, is there any
04:06:02 reason for that?
04:06:03 A. No. This was sort of a summary version of what
04:06:07 I discussed later in the paper is all. So the
04:06:11 cerebrovascular disease and atherosclerosis were an
04:06:18 expansion of that bullet.
04:06:27 Q. The next arrow point on page 8 says that
04:06:35 Minnesota has a greater percent of its residents
04:06:37 covered by health insurance than the national
04:06:40 population.

04:06:48 The arrow point gives the reference of 1991 to
04:06:54 1993, correct?
04:06:55 A. Yes.
04:06:55 Q. On page 21 of your report when you talk about
04:06:58 that factor you refer to the years 1992 and 1993.
04:07:04 A. That may be a typo.
04:07:06 Q. Do you know which one is correct?
04:07:07 A. Not just off the top of my head, no.
04:07:11 Q. In your opinion is that difference significant?
04:07:20 A. It might be. Again, it was simply another

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effort to illustrate the differences between Minnesota and the nation as a whole with respect to health care coverage.
Q. And you understand that Drs. Zeger, Wyant and Miller controlled for health care coverage in their work?
A. Yes.
Q. And I take it that controlling for that factor doesn't change your opinion that that difference suggested you shouldn't use the national data to make state estimates?
A. Not at all.
Q. The next arrow point on page 8 talks about a difference in the degree of education of people in Minnesota versus the nation, correct?

A. That's correct.
Q. Has the Surgeon General ever stated that the degree of educational attainment is significant in understanding the relationship between smoking and disease?
A. No, but the literature has frequently referred to the fact that educational attainment and smoking behavior differ.
Q. What do you mean by stated that educational attainment of smoking behavior differed?
A. That more educated people have fewer -- there are fewer smokers among the more educated than there are among the less educated.
Q. Do you have any reason to believe that education plays a role in the relationship between smoking and disease?
I understand you're saying plays a role in smoking, who smokes and who doesn't, but does it play a role in the relationship between smoking and disease?
A. It may because as it relates to income it may also relate to health care coverage and health care utilization and whether or not you ever develop disease that is clinically manifested depends on how early you catch some conditions, whether or not

you're ever diagnosed with conditions.
Sometimes you have a precancerous condition; for example, you could be diagnosed and treated and you've never had a cancer. So it could be, yes.
Q. Do you think it's likely that education is a factor in the relationship between smoking and disease?
A. No, I think that's less likely than the fact that smoking behavior differs and education differs. Probably equally it would have some difference on whatever differences may exist between Minnesota and the nation notwithstanding the chart that you showed me in the Zeger report.
Q. Which you found showed similarities between Minnesota and the nation in the overall smoking rates?
A. That's correct.

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04:11:20 18 Q. Again, I take it that the controlling in the
04:11:29 19 calculations would affect your opinion that you can't
04:11:36 20 use NMES at the state level?
04:11:38 21 A. That's correct.
04:11:38 22 Q. Your next arrow point at the bottom of page 8
04:11:50 23 says that Minnesota has a lower percent of its
04:11:53 24 residents who rely on public aid, AFDC and Federal
04:11:57 25 Supplemental Security Income than the national

04:12:01 1 population for 1990 to 1993; is that right?
04:12:08 2 A. That's correct.
04:12:09 3 Q. Are AFDC and Federal Supplemental Security
04:12:19 4 Income health care programs? Should I repeat the
04:12:32 5 question? Are AFDC and Federal Supplemental Security
04:12:38 6 Income health care programs?
04:12:39 7 A. Oh, no, they're not.
04:12:44 8 Q. How do you believe that relying on public aid
04:12:57 9 such as AFDC or Federal SSI affects the relationship
04:13:03 10 between smoking and disease?
04:13:06 11 A. I don't think they directly affect smoking and
04:13:09 12 disease, but that's another indication of what
04:13:12 13 proportion the population may be considered as within
04:13:19 14 the Medicaid population.
04:13:27 15 Q. Is that a better tool for determining what
04:13:36 16 percentage of the population would be considered in
04:13:38 17 the Medicaid population than income itself?
04:13:42 18 A. No, but it's one more.
04:13:58 19 Q. Do you have an opinion as to whether the
04:14:02 20 difference that you found between education in
04:14:06 21 Minnesota and the nation differed?
04:14:08 22 A. No, I don't.
04:14:08 23 Q. Do you have an opinion between whether the
04:14:12 24 difference you found between Minnesota and the nation
04:14:14 25 in the people you found who rely on AFDC and

04:14:25 1 Federal SSI --
04:14:26 2 A. No, I don't.
04:14:27 3 Q. If you turn to page 9 and continue with the
04:14:30 4 arrow points, the one at the top of the page
04:14:34 5 discusses the difference between Minnesota and the
04:14:37 6 nation in terms of employment level; is that correct?
04:14:40 7 A. That's correct.
04:14:41 8 Q. And on page 22 of your report you provide more
04:14:45 9 information about that difference; is that right?
04:14:47 10 A. Yeah.
04:14:47 11 Q. Is the difference that you found stated there on
04:14:52 12 page 22, employment level, significant in your
04:14:56 13 opinion?
04:14:57 14 A. Does it affect my opinion?
04:15:02 15 Q. Is that a significant difference?
04:15:04 16 A. It probably is. It's pretty substantial.
04:15:07 17 Q. Has the Surgeon General stated that being
04:15:12 18 employed or not affects the relationship between
04:15:17 19 smoking and disease?
04:15:19 20 A. I don't think he did, no.
04:15:21 21 Q. Do you recall seeing any articles or reports of
04:15:24 22 anyone else that suggest that being employed or not
04:15:26 23 affects the relationship between smoking and disease?
04:15:29 24 A. No, but it does affect your income, whether or

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04:15:37 1 population.
04:15:37 2 Q. Is that the main significance you see to that
04:15:41 3 difference?
04:15:45 4 A. Yes.
04:15:45 5 Q. There is only one more arrow point. Let's get
04:15:58 6 to that. The last arrow point on page 9 states that
04:16:06 7 Minnesota had fewer members of its population living
04:16:09 8 below the poverty level than the nation between 1980
04:16:14 9 and 1993; is that right?
04:16:16 10 A. Correct. Between '80 and '93.
04:16:20 11 Q. And is the difference that you found there
04:16:25 12 significant?
04:16:26 13 A. I think so. Probably, but I didn't test it.
04:16:30 14 Q. Is the importance of that factor, again, another
04:16:38 15 way of getting at the potential Medicaid population?
04:16:44 16 A. That's correct.
04:16:45 17 Q. Do you know if the Surgeon General has ever
04:16:54 18 stated that whether one lives below the poverty level
04:17:01 19 or not is significant in the relationship between
04:17:08 20 smoking and disease?
04:17:10 21 A. I don't recall that he said anything specific to
04:17:13 22 that, but, again, it comes back to the fact about
04:17:17 23 what I said before, if your income is lower you're
04:17:21 24 less apt to seek medical care unless you have some
04:17:25 25 other way to get at it. It affects health care

04:17:29 1 utilization.
04:17:29 2 Q. As opposed to disease itself?
04:17:32 3 A. That's right.
04:17:32 4 MR. LOVE: Why don't we stop here for
04:17:36 5 today and pick it up tomorrow morning.
04:17:47 6 (Recess taken.)
04:17:47 7 * * *
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1 C E R T I F I C A T E
2
3
4 I, NANCY K. JOHNS, hereby certify that I am
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qualified as a verbatim shorthand reporter; that I took in stenographic shorthand the testimony of ROBERT D. VERHALEN, M.D. P.H. at the time and place aforesaid; and that the foregoing transcript consisting of pages 1 through 211 is a true and correct, full and complete transcription of said shorthand notes, to the best of my ability.

Dated at Minneapolis, Minnesota, this 8th day of September, 1997.

_____

Nancy K. Johns, Notary Public
Hennepin County, Minnesota
My commission expires January 31, 2000.

C E R T I F I C A T I O N

I, ROBERT VERHALEN, the deponent, hereby certify that I have read the foregoing transcript consisting of pages 1 through 211, and that said transcript is a true and correct, full and complete transcription of my deposition except:

ROBERT D. VERHALEN, M.D. P.H
Deponent

Sworn and subscribed to before me this day of , 1997.

Notary Public

My commission expires

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